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EDITORIAL NOTES.

WHY NOT GOOD LAWS?

A good many wise men have said that it would pay the state richly to allow our legislators to draw an annual salary for, say, ten years, and stay at home and attend to their several businesses. But that is altogether too Utopian. A legislator is to legislate and every two years he must do something. Then why not see that some good things are done; some things for the public health and welfare? Or shall it always be that we have first consideration for the hog and the dollar, and then, if we have time, devote a little of it to children's lives and the public health? Why would it not be a good plan for the physicians of each senatorial and assembly district to take careful watch of the acts of their representatives in the legislature so far as these acts are connected with matters of public health, and let the representative know of our approval or disapproval? And not only the legislator, but his constituents should know what he has done on these important matters and how his acts are viewed by the medical profession. Public health should know no party. Let no political considerations weigh with us when it comes to considering whether a legislator has done right or wrong in matters of public health. Let each county society, when the proper time comes, go directly to the people and explain just wherein each certain representative has acted well or ill in protecting the public health. Legislators go on the principle that the public memory is short lived, and in the main they are correct. But we will not be short lived; in this office a record will be kept of the attitude of every legislator upon all questions of public health, and when peace is finally restored to us (when the legislature stops legislating), that information will be furnished to all our county societies. Also, it will be kept on file, and two years from now when many of these gentlemen will be eagerly seeking re-election, it will be very useful to be able to say to the people that their representative was such in reality and had thought for the public welfare. And there are so many things that could and should be done, the mere listing of them would consume much space. Fundamentally, however, there are certain principles that apply to all, and the greatest and most important of these is that all matters affecting public health should be far removed from political interests. Take all public health matters out of politics. Our boards of health, state and county, our asylums, our hospitals, our institutions of every sort and kind relating to health matters should be removed from politics and placed on a merit basis.

PURE MILK.

Take the pure milk question, for example, and see wherein a wise legislation could so surely and so quickly settle the whole problem and remove the filth from that emulsion of germs and dirt which is now served to us under the name of "milk." The dairy inspection law is a farce, for the dairy men themselves control it—and they are after money, and only money. But suppose the control of the entire milk supply of the state should be put, where it belongs, in the hands of the State Board of Health? Suppose we followed the plan in force in Switzerland; it is mighty simple, but most absolutely effective. The control being in the hands of the State Board of Health, and enough authority and sufficient resources allowed it, it would be easy to require that any person in the state who desired to engage in the milk business must first secure a permit so to do from the board. This permit would only be issued under certain conditions; if the barns and buildings were sanitary; if the herd had been tested and found free of tuberculous cattle, and if other details were such as to meet the approval of the board. And further, the board should have full power to suspend or revoke such permits at their pleasure and upon the violation of any of their rules. At the present time we have milk commissions in some sections which are struggling valiantly to improve the quality of milk served in their respective communities, but diversified authority negatives much of their work. In the larger places most of the milk consumed comes from without. In San Francisco nearly all the milk supplied comes from other counties—counties that are not under the control of San Francisco. But with state control it would make no difference where the milk came from, for all dairies would be subject to the same rules and regulations and the same full control.

AND THEN TUBERCULOSIS.

Here again is a rich field for wise and good legislation. Let the State Board of Health be given large powers in this matter also. Let it provide for proper classification and reporting of all cases of tuberculosis. Let it make good and proper rules for the guidance of the people, and give it authority to enforce them. Further, let us have a Tuberculosis Commission with enough funds at its disposal to do something toward the education of the people to the dreadful and needless slaughter of one-tenth of their number by this one preventable disease. And in good time let the state show as much wisdom in the financial care of its people as private institutions exhibit. Insurance companies in Germany have a number of sanatoria for the care of their insured when they get infected with tuberculosis; and it pays them. Recently, the Woodmen of America, a fraternal organization that pays death benefits, has perceived the wisdom, from a purely commercial standpoint, of the same thing; and they have established, at Colorado Springs, a sanatorium for their tuberculotic members. Then let our legislators wake up to the importance of this matter to our people, in dollars and cents, if you please, and let them provide, through the State Board of Health, for a state sanatorium for the care of those incipient cases of tuberculosis in people who might readily be cured of the disease and placed, once more, upon a wage earning and producing basis. Is it not a matter of simple common sense? If insurance companies think so—and have proved it—why should not a well administered state effect the same saving of life—and dollars? The question has come up many times before and the matter of proper control has been the stumbling block. But if the control is placed where it belongs, with the State Board of Health, and if that board is kept absolutely out of politics, the problem is solved. Is it not so? Let us not play with public health—and lives; let us have a health department of the state that will mean just that, and let it have all the authority and all the means necessary actually to care for the health of the people of our state. There is opportunity for very much good legislation here, if our legislators want to do something for the good of the people as against the good of the many large vested interests; if hogs and dollars shall not receive first consideration.

AND OUR ASYLUMS.

The aborigine showed more consideration for the demented than do we, his civilized successors. The treatment of the insane or those alleged to be insane, and particularly their commitment, is a stench in the nostrils. The whole thing is steeped in politics for the reason, forsooth, that there is some patronage connected with the asylums and some fees connected with the transporting of the demented to the place of their confinement. The asylum board, or whatever its actual title may be, is merely a patronage bureau. Our present laws, by inference and statement, place the demented person in the criminal class and regard him not as one stricken with the most unfortunate of illnesses. A "warrant" must be issued and he must be "arrested"; witnesses must be brought before the judge who know the "accused." All these preliminary steps are in the hands of the sheriff or one of his deputies. The unfortunate is first put in jail and not infrequently in the same cell with a convict. And when commitment is ordered, the victim is turned over to a deputy sheriff to take to the asylum. The deputy, totally ignorant of insanity and usually terrified, resorts to all sorts of restraint which is generally cruel in the extreme and calculated to greatly aggravate the upset mental condition. The records of our asylums show innumerable cases where the greatest brutality has been exhibited toward some victim of dementia. In one instance a perfectly harmless patient was first tied about with rope, then rolled in a mattress and this in turn carefully roped, something over a hundred feet of rope being used—to tie up a harmless sick person. All this might easily be avoided by providing, as is the case in New York, that a trained attendant should be sent from the asylum to get the patient at the place of detention (and this should not be a filthy and vermin-infested cell in a jail) and take him to the asylum. But here again we run into trouble, for sheriffs' deputies get fees for this work; and that is part of the patronage of politics; another case of "dollars before life." Is it not worth while to take enough heed for the welfare of our people to get the asylum out of politics? Why not place their supervision where it also belongs, in the State Board of Health? Surely it is a matter of health and not a question of crime, and those who supervise the health of our state should have charge of its various institutions—all of them.

ABOUT THE COMMITTEES.

Heretofore it has been customary to refer all bills relating to medicine or kindred subjects to committees of the Senate and Assembly on "Public Health and Quarantine." This year the custom has been somewhat changed, in that, while the rule holds so far as the Senate is concerned, in the Assembly a new committee has been formed entitled a "Committee on Medical and Dental Laws." The Senate Committee on "Public Health and Quarantine" is made up as follows: Louis H. Roseberry, chairman, 33rd District, Santa Barbara; James B. Holohan, 29th District, Watsonville; H. S. G. McCartney, 38th District, Los Angeles; W. F. Price, 8th District, Santa Rosa; John W. Stetson, 15th District, Oakland. In the Assembly the "Committee on Medical and Dental Laws" is composed as follows: Thomas H. Silver, Chairman, 46th District, Pleasanton; E. J. Callan, 39th District, 162 23rd Ave., San Francisco; W. R. Flint, 58th District, Hollister; Walter R. Leeds, 70th District, Los Angeles; Frank Otis, 47th District, Alameda; Harry Polsley, 5th District, Red Bluff; Charles Lightner, 45th District, 524 Montgomery street, San Francisco. Write to some or all of these gentlemen—and do it at once—telling them that the present medical

law is sufficient unto the day; to please leave it alone. We need no boards of Naturopathy, nor yet of Chiropractic, nor of any other school or sect. Anyone may apply to the present Board of Medical Examiners and, if he knows enough of the fundamental subjects to do a minimum amount of harm, he may obtain a license to practise medicine, osteopathy, naturopathy, chiropractic, or any other brand that appeals to him. New laws or new boards are asked for by those who desire lower standards, and lower standards would work an injury to the public; let these gentlemen know the facts.

ABOUT EDITORIALS.

The question is occasionally asked by some members, and at times presents itself in the form of criticism, "Why does not the JOURNAL devote its editorial space to strictly scientific editorials on medical subjects, written by the leading men in the state"? The same question presented itself to the Publication Committee some years ago and was discussed at length. The gist of the matter, without going into details, is about this: There are plenty of medical journals dealing exclusively with scientific medical questions; the scientific editorials in the *A. M. A. Journal,* for instance, are the best of their kind published. This JOURNAL was established for the purpose of stimulating organization; of helping the physicians of California in material ways; of bringing to their attention questions of vital sociological importance. We often forget that we are a very important part of a living, breathing, pulsating population of a wonderfully rich country—but a population gone amuck through ignorance; just as we forget that we, as physicians, are an essential part of this same population with distinct civic duties to perform. We have failed to grasp our birthright; we have not taken that position in the body-politic which we inherited as physicians. We have been deluded and defrauded; humbugged and swindled; imposed upon and lied to; and have existed in strife and jealousy, to our own detriment. Where is the journal, except for a few organization publications, that has ever devoted its energies and every bit of its effort to the work in the sociology of medicine? What privately owed medical (?) journal has ever come out and fought hard in the insurance fee fight? What one of them has had the courage—or the simple honesty—to come out and tell the truth about the rottenness of the nostrum business? It may be urged that some of the things for which we have argued and plead are impossibly ideal. But who knows that that is true until we have tried to do these things with the full measure of our strength? Take, for example, some of the things in this very issue of the JOURNAL. It will not be denied by any one that the full supervision of the health of the state should be in the hands of those whose business it is to study health and disease—physicians. If that is true, why should it be impossibly ideal to bring about such a condition of things that will place the full control of all health matters in the hands of our profession—where it belongs—in the hands of a strong State Board of Health? If a thing is right it is right and the mere fact that it is ideal should not deter us from working for that object. There are things quite as vital to our profession as the size and shape of a new blood plaque or the staining of a new germ.

OUR FEES.

Altruism is a good thing and it is the actuating principle of our profession; but a certain amount of altruism is due the home and the individual. In this state medical fees have always been somewhat better than in other parts of the country; but we are feeling the contract business and it is a menace. True, in many places there are men who are constantly cutting fees; but they generally get what their services are worth if they get anything. McCormack has well pointed out that there are a good many physicians in this country who are absolutely incompetent; they were turned out by the thousands before there was any state board control; in fact, it was this very thing that brought about state boards of medical examiners. In the long run, it is the patient who suffers from these cutters of fees, for the patient gets just about what he pays for. If he gets his medical attention from a lodge doctor at the rate of about ten cents a visit, he is getting just about ten cents' worth; and the doctor is getting full payment for poor services. It is up to us to let the people understand these things; it is up to us to make our county medical societies places of and for medical instruction—and to let the people know that; it is up to us to let the people know that it pays them, in good services rendered, to support their physicians so that they may receive from them the best up-to-date treatment—which is an expensive thing to learn to give. In Humboldt County the contract business has been cultivated and developed till the whole county is disorganized and demoralized; and the very men who have done it are now beginning to suffer the consequences. Ask them what they think of unlimited contract work. Maintain good fees and insist upon it that they be paid. The physician who conducts his affairs in a businesslike way, has the respect of his patients; they know that he is an orderly man and a systematic worker and in the end it pays. If some other chap wants to do the lodge and contract work, let him do it; that is about all he is probably good for, and soon or late most of his victims will come to appreciate that fact. But let the people know that good fees mean good doctors and that poor doctors mean very scant medical treatment.

INSURANCE IMPERTINENCE.

Surely, there can be nothing under heaven more absolutely and insultingly impertinent than an insurance company. It calmly says to the medical profession, "you are a cheap bunch and we will dole out to you what we please; we will pay you about what we would have to pay ordinary unskilled labor, and we, the officers, will take all the surplus income as our

salaries." Comes the Philadelphia Casualty Company with a "schedule of surgeons' fees"—heaven save the mark!—that is certainly a wonder! And doubtless there are surgeons who have signed the agreement and have undertaken to set and dress fractures of the femur for the magnificent sum of $15.00 per fracture; or to perform an amputation of the thigh for the princely fee of $20.00; or remove a leg for the startlingly munificent dole of $12.00; or give an anesthetic for the very considerable fee of $1.00. And think of binding yourself to appear in court to testify for *$10.00 per case!* And a case may last for days and weeks; you may have to spend whole days in court—for $10.00 for the whole time! Such generosity! Such open-handed consideration for the most humane of the learned professions! Were it not too painfully true that some poor doctors will always be found who will take anything they are given, it would be excruciatingly funny, this list of magnificent fees offered by the Philadelphia Casualty Company. And then consider the Home Life Insurance Company, of New York—and some of the others. One of our members writes that for 15 years he examined for the Home Life, always receiving $5.00 for an examination. Then for some years they did no business in his vicinity; last June an applicant was sent to him for examination for a $1,000.00 policy. The examination was made and a bill sent in for $5.00. A check for $3.00 was returned. The doctor refused to accept the check for $3.00 and was then told by the medical director, F. W. Chapin, that a draft for $3.00 would at any time be paid, but a draft for $5.00 would not be paid. The company fixes its own fees; take them or leave them or go to the Devil. The New York Life, which has been doing little business on account of this fee question, is trying a new scheme. It is trying to appoint examiners on small salaries, $6.00, $9.00, etc., per month, based on the $3.00 fee schedule. Don't be fooled into accepting this. The company will have to give in, in time, if the best men will have nothing to do with these absurd fees. The Travelers has agreed to pay a minimum $5.00 fee; be sure and send in your bill for $5.00 for every examination made for this company; they will pay it though they have not advertised the fact. Demand it and you will get it. Stick the fight out and we surely will win; it cannot be otherwise.

EMMANUEL "MOVEMENT."

There is nothing, absolutely nothing new "under the sun." Nor is there anything new in the effort made by those who are not sick—but think they are—to get rid of that which they have not. Now comes the Emmanuel "movement" and demands our attention. The only thing original about it is the fact that, at least in its origins, it places itself under medical direction and guidance. If it will so remain, it may accomplish much good, for the clergy have that time to devote to the psychology of individuals who have nothing radically the matter with them, which the average physician has not. And, too, in the very nature of their work they are dealing with the not-understandable; with mental conditions; with thoughts and beliefs rather than with material livers and spleens and stomachs and hearts and legs and such-like things that are diseased. We have now a number and we doubtless will shortly have very many Emmanuel "movement" healers, just as we have had for years many eddyite "healers." So perhaps, if the field is to be divided, it may be a "movement" in the right direction after all. At any rate it is here and if it can be kept under medical direction or supervision, so much the better.

THE UTILIZATION OF SOCIAL WASTE-PRODUCTS.

By W. A. BRIGGS, M. D., Sacramento.

One of the chief factors in modern industrial progress is the utilization of those by-products which formerly were mostly if not wholly waste. Coal-tar is a noteworthy example of these one-time wastes, which, in so large a measure, constitute not only the wealth of the modern chemist, but in this particular instance, of the manufacturer, artist and therapeutist, also.

In that evolution of society which we call civilization there are also by-products not only useless but even deleterious, destructive; like those by-products of industry which emit noxious vapors and poison the neighborhood. With social evolution, unfortunately, we have individual devolution.

But sociology has staggered on under its burdens "almost too heavy to be borne" quite unmindful of the experience and advances of her sister sciences. These waste products of civilization, increasing in amount and in noxiousness, continue not merely waste but destructive; they still poison the neighborhood; they still lay heavy and constantly heavier burdens on society.

Can we not take a lesson from industry and convert this serious social liability into a valuable social asset? Certainly we have both need and opportunity.

From a positive opulence of illustration take for instance tuberculosis: Koch and Von Behring, equally eminent authorities, hold, in one respect, diametrically opposite opinions; Koch maintaining that human tuberculosis is practically never, Von Behring that it is practically always, of bovine origin.

The question is of vast significance, economic as well as sanitary. If Koch is right the sanitarian may ignore bovine tuberculosis; if Von Behring is right he must attack it with the utmost vigor. If Koch is right the economist should be up in arms against a useless sacrifice of the bovine race; if Von Behring is right he must acquiesce in its necessity.

An early and definitive solution of this question is earnestly sought by both economist and sanitarian. Such a solution, however, with the means now in the hands of the medical profession and sanctioned by present ethical standards, is impossible. Such a solution requires experimentation on human beings.

Can such experimentation be made to conform to the dictates of an enlightened conscience, public as well as medical? In answering yes I have neither hesitation nor reservation. By a simple amendment of our criminal laws, without jeopardizing their efficiency, without violating the sacred obligations of the medical profession, without outraging the public conscience, these lives, forfeited to the law, may be dedicated to science and humanity.

For this purpose the White Crusaders have in preparation a bill to present to the Legislature instructing the State Board of Health to conduct experiments on those capital convicts, who, in consideration of commutation of sentence to life imprisonment, and, with the full concurrence of the Governor, shall voluntarily petition for such privilege.

What are the possible objections to such a law? 1. It would be in violation of the Constitution of the State in that the proposed experimentation would be a cruel and unusual punishment. To this objection there are several and sufficient answers: (a) The experimentation proposed is not a punishment and in no way is intended as a punishment. It is something proposed in lieu of punishment which would permit the convicted criminal to expiate his offense in part, by a voluntary and important contribution to the welfare of society. It is an alternative of punishment, a foregoing of the extreme penalty of the law in consideration of valuable service rendered the state; as commutation of sentence is often granted for services rendered in a prison break or in an attack on prison officers. (b) The experimentation in and of itself would not be physically painful even, and if not painful certainly not physically cruel. When exceptionally it would otherwise be painful it would be done under anesthesia. (c) Whether experimentation as an alternative of hanging would be mentally cruel perhaps the convict himself might well be considered the best judge. The proposed law contemplates no compulsion. It leaves the condemned criminal free to make his own choice. If he prefers experimentation in the service of mankind as some slight expiation of his offense, in all candor is not that sentimentalist cruel who insists on his hanging and thus deprives him not only of life but also of this last solace of his conscience? (d) In its results such experimentation would often be negative and when positive, its results would be no more distressing than disease and death always are and not as distressing, not as "cruel" as death on the scaffold—at least if we may trust the practically unanimous verdict of mankind.

2. It would be unconstitutional because commutation, and postponement of sentence and pardon are constitutional prerogatives of the Governor. The proposed law suggests no change in this respect. The convict voluntarily petitions the Governor for the privilege of experimentation. The Governor grants or denies the petition as his judgment directs and, in the former case, postpones execution until the experimentation has been completed to the satisfaction of the State Board of Health, when he commutes the death sentence to life imprisonment.

3. In the minds of the criminal classes it would diminish the terrors of the law. In convictions for murder in the first degree the jury under the present law, imposes either life imprisonment or the death penalty. If the Governor instead of the jury should exercise this discretionary power, in what way would the terrors of the law be diminished? On the contrary they would rather be increased. For under the proposed law the Governor would commute the death sentence to life imprisonment in selected cases only and then not until the convict had undergone a number, perhaps a large number, of experiments. In other words, the convict for murder in the first degree who escapes the death penalty under the present law gets life imprisonment only, whereas under the proposed law he would get life imprisonment plus experimentation. On the other hand as against these possible but clearly nugatory objections what may be reasonably urged in favor of the proposed law?

1. It would tend to diminish the difficulties of trial by jury. An alternative to capital punishment to be granted in proper cases by a higher authority would diminish or remove in the minds of many the most serious objection to jury service in capital cases and would faciliate agreement in a verdict of murder in the first degree.

2. It would open the door to the further and more serious and systematic study of the criminal classes—their genesis, pathology, psychology, prevention and treatment. Possibly it might finally direct the public mind to a serious and systematic effort toward the prevention of criminals rather than their cure, to the formation of character rather than its reformation.

3. Under scientific supervision it would inevitably lead to valuable discoveries in physiology, pathology, bacteriology and therapeutics. Before us as physicians lies a continent of vast extent, in many respects darker than darkest Africa. Exploration even where seriously undertaken has been superficial and often indirect. The human stomach, for instance, except by inference from comparative physiology, is largely a terra incognita. Pawlow's work on the stomach of the dog is indeed brilliant and illuminating but in how far his conclusions hold good in their application to the human stomach no one knows. A convict saved from the gallows might be more than another Alexis St. Martin—confirming, correcting and completing our knowledge of human digestion and putting man, as far as his stomach is concerned, on a scientific equality with the dog.

Notwithstanding the industry, patience and ingenuity of hundreds of investigators the etiology and therapy of cancer are still largely subjects of controversy. They could be cleared up, at least in a great degree, by human experimentation. In typhoid fever, dysentery—in the infectious diseases generally and particularly in tuberculosis, as I have said, great problems lie before us. Human experimentation is the surest, the most direct and in some

respects, the only way to their solution. What progress might be made if the capital convicts of the world were devoted to science and humanity instead of the scaffold!

Shall a maudlin sentimentalism stand in our way? —a sentimentalism which insists, not only that the convict shall hang, however much he may prefer experimentation, but also that such experimentation shall not be done, however many human lives might be saved thereby; a sentimentalism as depraved as it is consistent.

WHAT IS A PRACTICAL EXAMINATION IN ANATOMY?—(Second Paper).

By DAIN L. TASKER, D. O., Los Angeles.

The day following my receipt of the report of the examination held by the State Board of Medical Examiners in Los Angeles, Dec. 1st, 2nd and 3rd, 1908, I received the following letter from the Secretary:

"Dear Doctor:

"As a matter of comparison I send you the following figures of those who fell below 60 on the various subjects:

Anatomy	16	Pathology	8
Bacteriology	12	Physiology	10
Chemistry	2	Hygiene	7
Histology	13	Gynecology	2
Obstetrics	1	General Diagnosis	5"

This would seem to indicate that the examination in anatomy had been the cause of failure of a relatively large number. Of the 65 applicants who took the examination, 35 attained the general average of 75%.

A study of the grades of the 16 who fell below 60% in anatomy shows that only one of them would have received a license by attaining 60% in that subject. Evidently the fifteen others failed in more than the one subject.

The general average made by the whole number of applicants in anatomy was 65.9%. Twenty-six applicants attained better than 75%, twenty-three between 60 and 75%, while sixteen were below 60%.

In an examination of this kind it is always interesting and helpful to know what sort of questions cause the low percentages. Since an examiner is human long before being a doctor, there can be nothing but a feeling of sorrow over the result of an examination which checks the expectations of a large number. It is very fortunate that the examiner is ignorant of the personality of the producer of each paper, thus leaving his mind free to work on the subject-matter of the answers.

Since I am in favor of our medical law and believe in the ultimate value to medical science in having all applicants examined in fundamentals rather than in the theories and practices of particular cults, I am anxious to conduct my part of the examination in such a fair and impartial manner that failures will be the result of ignorance of the subject rather than the severity of the test.

Both those who favor and those who oppose the present form of medical law will be interested in anything which will throw any light on the working of the law, hence these remarks.

"Describe the venous circulation of the rectum." The answers to this question averaged 6.4%. This question was chosen because of the anastomosis of the general venous and portal circulations at this point and hence the tendency to piles as a result of portal stagnation. A large number merely mentioned the Superior, Middle and Inferior Hemorrhoidal Plexuses. Here is a sample answer: "The veins of the rectum are the superior and inferior hemorrhoidal. They form a plexus around the organ one below the sphincter and the other above. This plexus continues up the rectum and joins with the mesenteric vein and is emptied into the illiac vein."

The replies to questions 2, 8, 9 and 10 are amply explained by the illustrations. These four questions were worded as follows:

2. Give point of abdominal entrance (vertebral), course and point of division of the abdominal aorta. (Use diagram.)

8. Give relation of the aortic arch to the chest wall. (Use diagram.)

9. Give topography of the spleen. (Use diagram.)

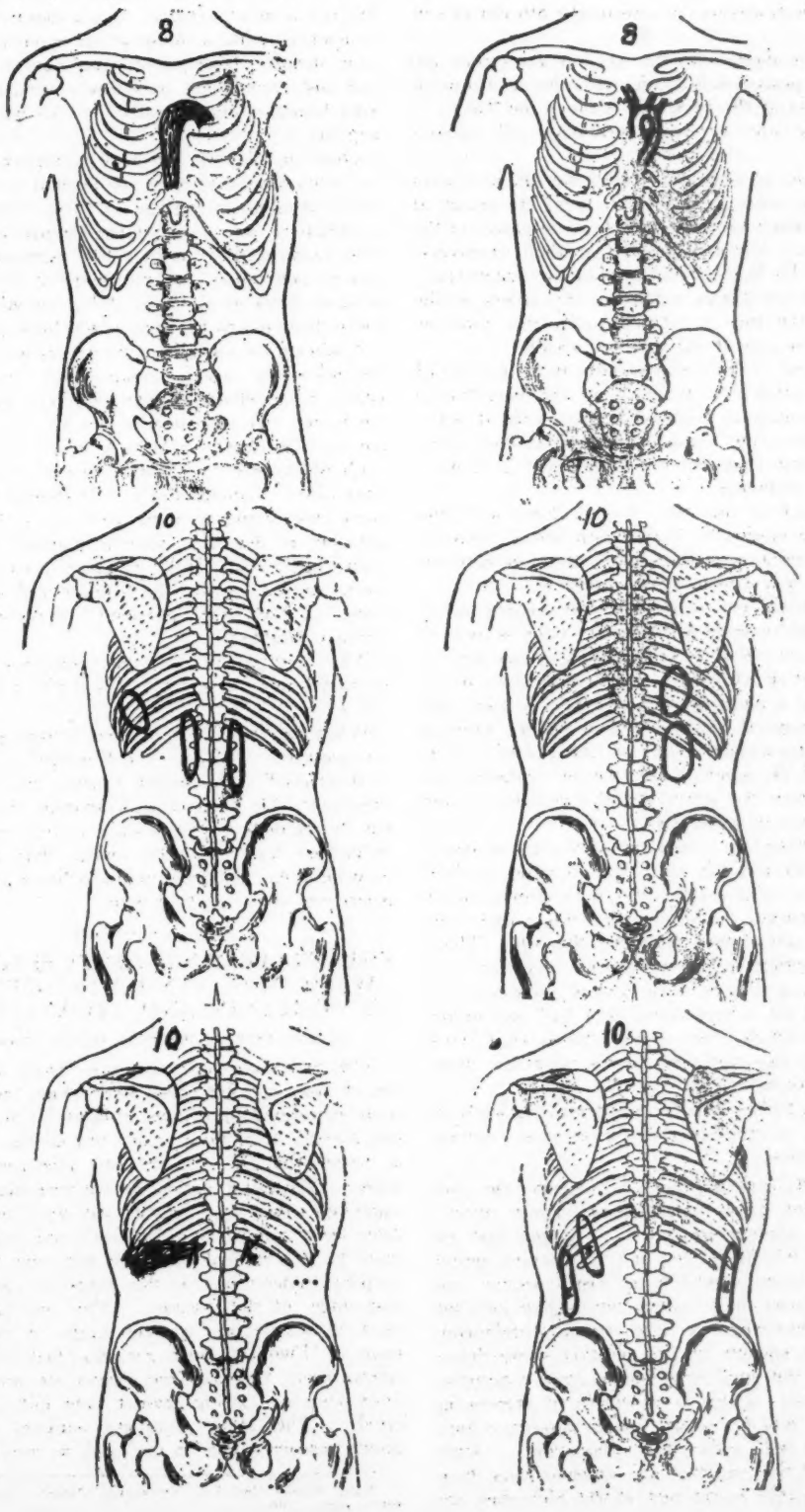
10. Give topography of the kidneys. (Use diagram.)

These diagrams furnished a double test in that it is evident that many of the applicants found it very difficult to get their bearings on the surface of the body by using bony landmarks. These questions called for knowledge of organography essential to clinical examination of the aortic arch, abdominal aorta, spleen and kidneys. Only a few of the diagrams can be presented on account of lack of space but these serve to prove that differences in diagnosis can never be avoided so long as such a vast divergence from the normal constitutes the ideal position of these structures conceived by the various diagnosticians. Physical diagnosis is supposed to be founded on the normal relation of anatomical structures. What value would you attach to an examination of yourself if you knew your physician lacked fundamental knowledge of what constitutes the normal? Shifting aortas, vagrant spleens and wandering kidneys were numerous in this examination.

I chose the articulation of a typical rib (7th) with the spinal column as the third question. The articulation was selected because it is studied in anatomy and physiology under the head of respiration. I indicated a particular rib so that the applicant would need to locate it with respect to particular vertebrae. The average made on this question was 4.7%. Judging by the replies very few of the applicants have a knowledge of costo-vertebral articulations. Here are a few of the misconceptions:

"The rib then runs outward, backward and a little upward to articulate with the transverse process of the upper vertebra."

"Articulates with the body below spinous processes."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"The tuberosity of the 7th rib articulates with the facet on the transverse process of the 8th dorsal vertebra."

"Rib articulates with the body of a vertebra and transverse process below and with the rib below at the junction of the neck and body of the rib."

"It articulates at two vertebrae and spinous processes."

"A typical rib articulates with the spinal column by its head being in apposition with the faucet of two articulating vertebras which are situated on the superior and inferior surfaces of their transverse processes. Its head is held in place by ligaments."

"7th rib articulates with the demi-facets of the two vertebrae and its tubercle articulates with the transverse process of the vertebra above."

"The head of the rib articulates with the side of the body (articular process) of the vertebra to which it is securely fastened by ligaments of white fibrous tissue. The bond of union being distributed in such a way that one rib is anchored as it were to several vertebrae."

"The head of the 7th rib articulates with the facet of the lamina of the seventh dorsal vertebra and the tubercle articulates with the facet between the seventh and eighth dorsal vertebrae."

"The 7th rib articulates with the seventh dorsal vertebra; this vertebra has an entire facet, is covered with cartilage, head of rib fits into this and is joined to the vertebra by a capsular ligament, by an anterior and a posterior ligament which fuses into the periosteum of the rib and with the anterior vertebral ligament in front and the posterior ligament behind the superior and inferior ligaments are reflections from the lateral spinal ligaments. Joint has slight area of movement."

"The seventh rib articulates with the transverse process of 6th and 8th ribs. On its upper surface it has a facet which articulates with depression in transverse process. Under surface has a like facet for similar articulation with the 8th rib. These are held together by strong fibrous bands or ligaments forming a joint with limited movement."

"The 7th rib is articulated by a ball and socket arrangement which is not so moveable as other joints but is slitely moveable and unites with the upper part of the vertebra."

"The rib (7) has four facets for articulating with the body of a vertebra and the spinous processes above and below."

The fourth question was: "Describe the plan of distribution of a typical dorsal spinal nerve." The general average was 5.3%. I judged that the general plan which did not call for naming special muscles or viscera would be an easy question, and practical, because the interpretation of pain calls for a general knowledge of nerve trunk distribution. Many of the answers to this question show that a very few of the applicants had a clear conception of the subject. There is a wealth of interesting replies but I will not weary you by quoting a long series. Two will suffice for illustration. "After the joining of the posterior and anterior roots these nerves go directly to the part of the body they are to enervate." Perhaps he knew more about it but I'm not a mind reader. "Each motor nerve is accompanied with a sensory nerve enclosed in the same sheath. The nerves pass out to the median line and from there pass down vertically sending their branches out laterally." This plan is strictly original.

Question five on "the bony landmarks of the hip and what lines determine the normal relation of the joint" brought an average of 6.8%. This question is similar to one given in the August examination. The answers show, with a few exceptions, a great lack of definiteness of knowledge of clinical or applied anatomy of the hip. A hip would have to be badly distorted to fit some of the lines proposed.

Question six asking for the nerves which "control the following muscle groups, (a) flexion of the knee, (b) extension of the knee, (c) adduction of the thigh, (d) extension of the hip, (e) flexion of the hip?" brought an average of 7.1%.

Question seven: "What viscera are behind the linea alba?" brought 8.4%. It seemed to me that every one ought to earn 10% on such a simple question as that but quite a number found it a stumbling block. Here are two answers: "The uterus in the female, the bladder and small intestines." "Stomach (portion) Transverse colon, Urinary bladder."

The averages on the other questions, diagrams, are as follows: 2 is 7.3%, 8 is 6.3%, 9 is 7.1%, 10 is 6.4%.

What has been here written brings us again to the question: "What is a Practical Examination in Anatomy?" We might precede this by another question: "Of What Use is Anatomy to the Average Practitioner?" Since such a large number fail under the test it would appear that anatomical knowledge has no active practical place in the daily experience of the medical man.

THE TREATMENT OF TUBERCULOSIS WITH INTRAVENOUS INJECTIONS OF TUBERCULIN AND ATOXYL.*

By MAX ROTHSCHILD, M. D., San Francisco.

The following paper gives a report of a number of cases of tuberculosis which have been treated with intravenous injections of Koch's Old Tuberlin and Atoxyl, with more or less rest in bed, and with a preparation of creosote and phenacetin internally. The exact method of the treatment will be explained later on. In the last four years there have been treated one hundred and eighty-three cases by this method; of these sixty-one have been incipient tuberculosis of the lungs or cases in the first stage of the disease. The rest have been cases of tuberculosis of the lungs in the second stage. Two of these patients died of miliary tuberculosis. One hundred twenty are entirely free from symptoms at the present time and practically cured. The other sixty-one patients are still under treatment and on the road to recovery.

* Read before the San Francisco County Medical Society, June, 1908.

The cases in the far advanced stage of phthisis will be dealt with at the end of this paper. The results are naturally not nearly as encouraging as in the one hundred and eighty-three cases.

The preliminary report of the first twenty-five of these cases of tuberculosis was to be read at the thirty-sixth annual meeting of the State Society of California in San Francisco, April, 1906, but the catastrophe prevented this and the report appeared in the September number, 1906, of the CALIFORNIA STATE JOURNAL OF MEDICINE.

The chief points which are of importance in the treatemnt of tuberculosis with this method are:

1. Intravenous injections of tuberculin combined with intravenous injections of atoxyl.
2. Rest in bed.
3. Fresh air.
4. Creosote and phenacetin preparation internally.
5. Diet.
6. The moral influence upon the energy and the mental condition of the patient.

It does not make much difference in my opinion what kind of tuberculin one uses. The old principle of Pasteur is still correct, namely: that any infectious matter brought into the system in such a form, dosis or virulency that it does not kill, changes the general sensitiveness of the organism; and in trying to make a subject immune, all modern methods follow this principle: To take such substances as antibodies, against which we are trying to protect the subject, this principle which von Behring has called the Isopathic principle.

In regard to active immunity, all modern methods are, more or less, modifications or improvements of the old principle of Pasteur, Toussaint and others, who brought dead bacteria, or such bacteria that were very weakened in their virulency, into the system for immunizing purposes. Thus, for instance, Kolle tried to render the German soldiers in Southwestern Africa immune to typhus, by injecting dead agar cultures into the muscles, with encouraging results. And in bubonic plague, the use of bacilli, not dead but only weakened in virulency, seems to have given even better results, according to the experiments of Strong in Manila. There is, however, one great objection to the use of these methods for practical purposes, namely: the strong local and general reaction which the vaccination causes if used subcutaneously. To overcome this local and general reaction several different methods have been essayed. The majority of authors have tried to separate the immunizing from the toxic substance. The different methods which various workers as, for instance, Conradi, Neisser, Shiga, Strong, Brieger and others tried, are well known; but none of all their preparations have gained general use or acknowledgment.

The writer in his experiments in treating tuberculosis has avoided the local reaction by injecting tuberculin intravenously. He has avoided the general reaction by using very much smaller amounts than had been used heretofore, and has increased the intervals between injections considerably. The first publication of the writer's method appeared in September, 1906, and the remarkable publication of Wright and Douglas, who also recommended most exact observation of the biologic reaction and the exact dosage of the immunizing injection, followed practically the same principles. The discovery of the opsonic theory of Wright is a wonderful progress in the treatment with immunizing substances.

Besides this principle of trying to kill microorganisms in the living being, modern research is willing to use other means to the same end, namely: the use of heterologous substances. A number of such remedies are now available. For instance, chinin in malaria and atoxyl in trypanosoma.

The use of this latter drug is to be highly advocated in the treatment of tuberculosis, and both for this and other diseases will be used, in the future, a great deal more than at present.

My attention was called to atoxyl many years back by an excellent article in the Therapeutischen Monatshefte, by Fritz Mendel of Essen. Mendel deserves great credit for advocating intravenous injections.

The writer has, for many years, used the intravenous injection of atoxyl in tuberculosis, malaria and anemias, making thousands of injections, and, with two exceptions, has never met with the serious results published by other workers. On two occasions the injections were followed by pyrexia, malaise, headache, muscular pains, nausea, cramps and diarrhea, lasting from twelve to forty-eight hours. On both occasions, the atoxyl solution was old and had a yellowish tint instead of being colorless. Since that time the writer has been very careful to use only freshly-made solutions, and he has not seen any more bad results. It is best to use à 12% to 15% solution. One gramm of this would represent 0.12 to 0.15 atoxyl. This amount of atoxyl, given intravenously, is fully sufficient to produce a marked effect and, on the other hand, it seems to be entirely safe, at least the writer has never seen the slightest indications of any trouble of the optic nerve.

Cases have been published by Bornemann, v. Kruedener, Fehr, Lesser, and especially by Prof. Robert Koch himself, in which the subcutaneous injection of atoxyl has resulted in the loss of vision. While the writer has never used more than about 1.0 to 1.5 in one month, some of the above-mentioned gentlemen have used up to 10.0 in a month, none of them less than 5.0; and the amounts which Robert Koch has used are still larger. In spite of Lassar's publication, who gives up to 0.5 per dose, the writer can not help feeling that these amounts are too large—seeing that during the last seven years he has made at least 30,000 intravenous injections of atoxyl, and in no single case have eye symptoms appeared.

There are a few people who react badly to any intravenous injection, irrespective of its quantity or nature, even salt solution producing hemolysis. These patients are not good subjects for intravenous treatment. It should always be made a rule to inject only a few drops, intravenously, the first time. The second time, if the patient has not

shown any symptoms of hemolysis, one can use the usual amount.

The combination of tuberculin solution with atoxyl has given far better results than the tuberculin alone. In cases where *very small* doses of tuberculin produce a marked reaction, it is better to follow it a few days later with an injection of atoxyl alone.

In the therapeutic use of tuberculin the fundamental rule should be "avoid reaction." In the publication of September, 1906, the writer called attention to this important fact. The publications of Wright have proved scientifically, what clinical observation had previously taught the writer. Frequent reactions, even if they are only very moderate, do more harm than good. At the same time, one can not advocate the very small amounts of tuberculin which are frequently used since Wright's publications. In the writer's opinion, the best results are achieved when the amount of tuberculin used falls just short of producing a reaction not only febrile but even malaise. Often the patient does not feel well for a day, or a part of a day, after an injection of tuberculin without having any rise of temperature. This also should be avoided, and the amount of tuberculin should be reduced at the next injection, until a point is reached where the patient feels no ill-effect whatsoever. If improvement follows, this quantity should be continued so long as improvement is maintained.

Patients who come under treatment with a temperature of over 100° at any time of the day, ought, if possible, to be kept in bed, with very light or liquid diet, until the temperature goes down, before an injection is given. The results are better and quicker if the injections are given when the patient has no fever. If, after a few weeks' rest in bed, the temperature shows no tendency to go down, injections of tuberculin, not over 100th mgr. in the beginning, should be given anyhow. It is advisable in all cases to use a fixed amount of tuberculin as a trial injection, and then to be governed by the strength of the reaction in fixing the amount of tuberculin to be subsequently used, and also the frequency of the injection. After some experience, one will quickly know how much tuberculin different patients will stand without any trouble, and, also, how often it is wise to inject. Advanced cases should receive a smaller amount and less frequent injections than incipient ones. The technic of the intravenous injections is generally known, and was fully described in the first publication.

Another point of the greatest importance in the treatment of tuberculosis of the lungs is rest in bed, and, I venture to say, that the greatest mistake in the modern treatment of tuberculosis is made in this respect. All patients with tuberculosis of the lungs should be kept in bed until all the symptoms of the disease have disappeared. This means a great deal longer than they are usually kept there. The writer is convinced that his results are so satisfactory, because he keeps his patients in bed for such a long time; this is not only in regard to patients who have fever. It is naturally a mistake to have patients with fever walk around, even if the temperature is only 1° higher than normal; but equally of patients with incipient tuberculosis who have no fever. They improve wonderfully fast in bed under the proper treatment. Sometimes six to eight weeks are sufficient, but there is no time limit. As said before, the absolute rule ought to be that all patients have to stay in bed until the chief symptoms—cough, expectoration, night sweats—have entirely disappeared. It is quite difficult to do this; usually the patients feel very well after a few weeks and they want to get out of bed. A great many patients have unfortunately not enough means, and these patients should stay in bed as long as they can possibly stay there. Those who have the means and are anxious to get up too soon, ought to be told how dangerous and treacherous their sickness is, as long as there is only the slightest sign of it left, and thus one can usually overcome their objections to staying in the sanatorium so long. In some of the writer's cases, symptoms disappeared entirely in two or three months, and the patients have been well ever since. Of course, the intravenous injections of tuberculin and atoxyl should be continued for quite a while longer, even if all symptoms have disappeared. In many cases, the patients had to stay in bed for long periods. One patient, in the third stage, was kept in bed more or less for ten months, with the satisfactory result that he got practically well. Patients with fever ought to stay in bed under any circumstances until the temperature is normal. None of the patients, for instance, who have a rise of temperature in the afternoon only, should be allowed to get up in the morning. This is the routine in different sanatoria, but it should be abolished. Of course, it is preferable to have the patients take this treatment in the fresh air and stay in bed out of doors day and night. If that is not possible, the excellent method of Dr. Dennison ought to be used.

This principle of cure by rest is pretty nearly as old as medical science itself, and it is just as important in the treatment of tuberculosis of the lungs as in the treatment of most other diseases. The publications of the good results which some authors, for instance, Murphy, Brauer, Laxer, Schell and Schmidt, have achieved with the Forlanini method in producing an artificial pneumothorax in the treatment of tuberculosis of the lungs, prove also how necessary it is to keep the diseased lung as quiet as we can possibly keep it. In some of my cases, which appeared favorable for such procedure, enforced rest of the lung has been sought by putting large strips of adhesive plaster over the diseased side, and the results have been satisfactory. It is an excellent method for relieving the pain during an attack of pleuritis.

Besides the specific treatment of tuberculosis, the internal treatment with creosote has to be discussed. We all know to-day that the expectations of Sommerbrodt, to find a specific remedy in creosote, have not been fulfilled; but, if we do get from

the use of a creosote derivative an increase in appetite, a decrease in cough and expectoration, and none of the disagreeable effects of creosote itself, on the stomach and digestion, we are satisfied.

Of the many different creosote preparations that have been used, the writer would recommend one which has given him better satisfaction than any others. It is a combination of creosote and phenacetin, in very small amounts, and it permits the taking of far larger amounts of creosote than the usual preparations. It is not necessary to say that he has used a great many different preparations during the last eight years, and, while many of them have given some satisfaction, a great many have also deranged the stomach of the patients and have so decreased their desire to eat. This combination of creosote and phenacetin has a decided influence in several respects. It increases the appetite, keeps down the temperature, and so avoids the night sweats with their weakening effect and decreases cough and expectoration. It is best given in capsules in order that the patients do not taste the creosote. As it is not irritating at all, it does not repeat, and the patients do not have the continual disagreeable creosote taste in their mouth. About a half-hour after taking, the urine becomes quite yellow in color, but otherwise it has no irritating effect on the kidneys. Pure ichthyol, in doses from sixty to three hundred drops a day, has also given good results, but many patients object to the disagreeable taste they have in their mouths for hours, after taking the medicine. The same is to be said of geosote, a combination of guajacol-carbonate and valeria.

The last point to which I should like to call your attention is the influence which the physician ought to exert upon the mental condition of the patient. Some patients, who know that they have tuberculosis, are extremely optimistic and do not seem to realize the danger in which they are. Others, who do realize their condition fully, are too much depressed and have practically given up every hope of recovery. It ought to be made a practice to enlighten every patient, who has a chance to get better, in regard to his condition. Such patients, who are too optimistic, ought to be told that they are seriously ill and that they will die, if they do not make up their mind to live fully and strictly up to the directions which the physician will give. Others, who are discouraged from the beginning, ought to be told that they will undoubtedly get well if they carry out directions properly, if they are cheerful, and help all they can. Nothing has a better effect on the mental condition of all patients than the gain in weight; and with that, we come to another point of great importance in the treatment of tuberculosis, namely, the question of diet.

I do not believe that patients who are sick for such a long time, as patients with tuberculosis usually are, ought to keep one fixed diet. It is much better to give them a varied diet and to cater to their appetite as much as their digestion will allow us to do than to write out a limited dietary for them, of which they will get tired very soon; but, with varied diet, the patients ought to take from four to eight eggs daily and from one to three quarts of milk. If they can not take the milk pure, they can get it in some changed form—Eskay's Food or rice milk, or any similar preparation. The Russell emulsion is to be recommended very highly as part of the daily diet. The overfeeding of tuberculous patients helps in various ways. A well-nourished system is naturally more resistant than a system that is underfed, and, besides that, the moral effect on a patient who has been losing in weight and who, all of a sudden starts in again to pick up and gain in weight, can not be underestimated. The patient becomes more cheerful and is more willing to carry out the orders strictly, as soon as he notices the continual improvement in weight.

Of the one hundred and eighty-three cases of tuberculosis in the first and the second stage of the disease, I would like to give you the history of a few cases—some of them as typical examples of the treatment and its results, and some because they might be of special interest. The rest of the one hundred and eighty-three cases will be published at some other time.

Mr. H. W. R., Napa. Age 40 years. Married seventeen years. Mother died of tuberculosis. Patient has been a heavy cigarette smoker for years. Used thirty to forty cigarettes daily. In April, 1907, he commenced to cough and lost weight, gradually, from 156 to 132 pounds. Much expectoration. Night sweats and shortness of breath. Four days ago severe hemoptosis. Patient went to the Walker Sanatorium October, 1907. Numerous T. B. in sputum. Dullness in left lobe. Rough bronchial breathing and rales. Stayed in bed about three months, then discharged from hospital. No more cough or expectoration. Breathing in left upper lobe a little harder than normal. Otherwise no other symptoms. Weight, 165 pounds. Microscopical examination of sputum made before the patient left the hospital, by Dr. Agnes Walker, showed absence of tubercle bacilli. Dr. Moffitt was kind enough to examine the patient for control and found the same condition. Patient is in excellent health at present time.

Frank E. M., Needles, California. Referred by Dr. Shepard, Needles. Civil engineer and surveyor. Age 35 years. No hereditary element. October, 1907, an attack of pleurisy and three to four days afterwards, blood in sputum. Ten days later hemoptosis. Microscopical examination by Dr. Shepard in Needles shows tubercle bacilli present. Examination shows rough breathing in both apices and dry rales during in- and exhalation. After being in bed for about three months, no more symptoms. The little sputum which the patient expectorated in the last month of the treatment was examined by Dr. Agnes Walker and myself and was free of tubercle bacilli. Dr. Moffit kindly examined the patient for control, before he left for home, and could not detect symptoms with the exception of slightly harsh expiratory breathing at the left apex. Gain in weight, thirty pounds.

William C. Pilot, 32 years old. In October, 1907, severe cold. Cough and expectoration ever since. also night sweats. Patient came for examination January 22nd and had a very heavy hemoptosis. He was sent to the Walker Sanatorium, where he had another very heavy hemoptosis. Examination showed tuberculosis of the right apex, rales and the other usual symptoms. Numerous tubercle bacilli in

sputum. Heavy expectoration, about one-half a pint in twenty-four hours. This case is interesting, because it is the fastest recovery of all cases that have been treated. Patient was in bed seven weeks and left the hospital free from symptoms. Examined for control by Dr. Moffitt. Patient gained about forty-five pounds and seems to be in perfect health at the present time and doing again night service on one of the boats on the bay.

Mrs. W. E. Th. School teacher. Age 33 years. In good health until four months ago, when patient contracted severe cold followed by cough, expectoration and severe hoarseness, which became gradually so bad that patient lost the voice entirely. Was treated for ulceration in throat by a specialist for about three months without result. Then patient went to Dr. Pischel, who referred her to me. Tubercle bacilli in sputum. Typical reaction after tuberculin injection. The history, which is most interesting on account of the rapidity of the improvement, is best given by Dr. Pischel's report: "Mrs. Wm. E. Th. March 20th, 1908. On posterior wall of the larynx two serrated ulcers. May 14th, 1908. The place of the former ulcers marked by pale spots. Ulcers apparently healed. Dr. Kaspar Pischel."

The only treatment consisted in intravenous injections of tuberculin and atoxyl. The voice of the patient is normal. There is no more cough nor expectoration.

Mrs. J. N., Richmond, Contra Costa county. Referred by Dr. S. Boyd, San Francisco. Age 47 years. Farmer's wife. Healthy until four years ago. Eighteen months ago dyspnoe slowly appeared, with loss of weight, cough and night sweats. Lost twenty-seven pounds.

Condition: February, 1907. Extreme weakness and pallor. Right thorax absolutely dull. Vesicular breathing absent. Harsh breathing and rales at right apex. Heart dislocated three inches to the left. Marked abdominal ascites, containing a large floating tumor above symphysis pubis. Both ovaries, examined per vaginam, show tumors.

Diagnosis: Pleuritis tuberculosa, peritonitis tuberculosa, fibroma uteri, ovarian tumors. February 9, 1907, paracentesis thoracis was performed at the St. Thomas Hospital, Dr. Pressley assisting. This was repeated six times, eleven quarts of typical tuberculous serum being removed. With the expansion of the lung, large and small sized rales appeared both in ex- and inhalation. On March 12th, Dr. Boyd performed laparotomy, removing a uterine fibroma and a small tumor from the right and a large tumor from the left ovary (found by microscopical examination by Dr. Blair to be spindle-celled sarcomata). Typical general tuberculosis of the peritoneum was present and much ascitic fluid. Abdominal cavity washed with normal salt solution. Intentio prima. A week later intravenous injections of atoxyl and tuberculin were commenced, from which time on improvement was uninterrupted. The appetite became excellent, and cough, expectoration and sweats gradually disappeared. Weight increased from one hundred and eleven pounds on March 25th to one hundred and eighty pounds on December 7th, by which time all pulmonary symptoms had disappeared and the patient was discharged well and has so remained.

All the rest of the one hundred and eighty-three cases are more or less similar to the cases of which I have given the histories. In some cases it took a longer time, in some cases a shorter time to get them well, but all got well or are on the road to recovery. In none of the cases has there been a relapse, and, even in most of the cases of the third stage, there has been a decided improvement in the condition of the patient, if only for a certain length of time.

Before closing this paper, it might be advisable to say a few words about the effect of the treatment in a great many of these cases of tuberculosis in a very advanced stage which we all see so very often. The results are, of course, always doubtful in such cases, and often I have been forced to tell the relatives of the different patients, to take them home after a short period of observation. It is advisable, even in cases that make a bad impression at the first examination, to put the patient to bed for a couple of weeks for observation. It happened to me several times that I did not think the patient had a chance to get better after the first examination, but, after the patients had been in bed for a little while, they showed improvement, and then under continual and strict care and treatment, got well. I would like to give the history of one of these cases sent to me by Dr. Shepard in Needles:

Man 20 years old. Father died of tuberculosis. About fiften months ago patient had grippe, followed by cough and expectoration and night sweats, and two attacks of hemoptosis; the first a year ago, the second March, 1907. Past weight one hundred and thirty-eight pounds. Weight at present time about one hundred and twelve pounds. Patient went to the hospital in June, 1907. His morning temperature varied between 101° and 102°; his afternoon between 103° and 104°. The apices of both lungs were badly affected. A large cavity in the left upper lobe. Interrupted breathing left lobe. Normal breathing in the right middle and lower lobes. Patient stayed in bed more or less for seven months under the usual treatment. Then he returned to Needles practically well. No fever, dyspnea, nor night sweats, scarcely any cough or expectoration. Weight one hundred and forty-five pounds. He is still under treatment with Dr. Shepard, as it was considered better to have him keep up the treatment for a while longer.

Now, if you will permit a short resume of the most essential points, the author would like to state that tuberculosis of the lungs in the first and second stage, if properly treated, is a most curable disease; but it is not sufficient to take one feature of the modern treatment and to neglect the others. Results are dependent on a proper combination of them all, nor ought there to be discouragement, if the first cases do not promptly respond in a satisfactory manner. It takes some experience, which, however, is easily obtained, to use any kind of tuberculin intravenously, but every practitioner can use it and can treat his patients successfully, if he diagnoses them early enough and if able to acquire the help of the patient. It would, indeed, be a great satisfaction if we did not see so many cases in the last stages, which come too late for treatment and which are doomed to die. The use of tuberculin and atoxyl intravenously, absolute rest in bed, combined with fresh air treatment, where it is possible, overfeeding and some good creosote preparation internally, and, with it all, the stimulation of the energy and enthusiasm of the patient; these are the important features, and, if to them the physician adds his own energy and enthusiasm, good results will undoubtedly be obtained.

Discussion.

Dr. D'Arcy Power: It seems to me that in a matter of this kind we must be guided by results. The

whole question of immunity, the whole question of bacterial vaccination, as to how far it is successful or not successful, is still to some extent an open question. I believe that Wright is in the right course. Yet there is not by any means a uniformity of opinion, either in regard to the therapeutic basis of his work or to the results that he has attained, and for that reason I believe, when we are dealing with such a method of treatment as has been brought forward by Dr. Rothschild to-night, that the subject must be judged by results, and results only. If Dr. Rothschild can show by a sufficient number of cases that intravenous injection is the right route, we must abide by the results of practice rather than be bound by theory. I hope that this matter will receive more attention from all of us, and I intend to follow it further.

Dr. Moffitt: I wish to say a word in regard to the use of tuberculin in general. Dr. Rothschild has sent a few of these patients to me to look over after he had them to all intents cured. I have been very much interested in his work, as we all must be, but I would raise my voice in caution rather than in commendation. I have in mind several patients treated with old tuberculin, who did remarkably well. I also have in mind other patients who were going quickly with acute tuberculosis, who are absolutely well to-day with no other treatment than rest and creosote. I have in mind, also, a number of patients whom I have seen during the last month, who are industriously using tuberculin without proper clinical spervision. I would emphasize what Dr. Rothschild said in his paper, that we must measure the reaction often by symptoms of the patient and by the sensations they have about their local lesions. I think a large part of Dr. Rothschild's results must be referred to his management of his cases rather than to his use of tuberculin. He instills his patients with his enthusiasm, keeps them quiet and feeds them properly and regularly. I am very enthusiastic about some of the patients I have seen, who have returned to their work after his treatment, but we must not go wild over the use of tuberculin.

Dr. Rene Bine: As to the preparation which is to be used in the injection treatment of tuberculosis, I should say that there are many clinicians in Europe who are obtaining excellent results with old tuberculin, just as with the new. In fact, it has been demonstrated that good results ought to be obtained with almost any preparation, provided that it be properly administered. Sahli favors Beraneck's, others favor Deny's, though, of course, the new tuberculin is now enjoying the greatest vogue. As regards the methods of administration, Koch having found that the power of agglutination which had been obtained by treating patients with tuberculin subcutaneously could be still further raised by intravenous injections, advocated this method as early as 1901. It was, however, very soon demonstrated that the same degree of immunization could be regularly obtained by the use of oft-repeated mild doses subcutaneously employed, and the intravenous method was promptly abandoned. The pulmonary administration of tuberculin advocated in 1904 has had practically no followers. The work of Wright has shown that mild doses are better than large ones. The reaction follows each dose, this reaction being determined by the estimation of the opsonic index, and Wright has claimed that by these determinations alone can one gauge the doses to be administered. Wright determines the index twice a week of cases which come to his laboratory. My experience has taught me that the index in most ambulatory cases of pulmonary tuberculosis fluctuates from day to day, and I therefore believe that to be of any avail, leaving aside the question of accuracy of technique of index determinations, one should have to test the patient's blood at least once daily at the start of any course of treatment. If I remember correctly, in the first report of Dr. Rothschild he speaks of injecting a dose of tuberculin sufficiently large to produce a reaction, the size of which is an indication for his further dosage. I should think that this preliminary injection would be a dangerous one, and therefore I should like to have Dr. Rothschild explain just how he graduates his dosage afterwards.

Dr. Rothschild (closing): I can not agree with Dr. Evans in claiming that the intravenous injection is harmful. In fact, I consider it the most harmless method a physician can use if he uses it properly. During the last nine or ten years I have made a great many thousand intravenous injections, and I have never seen any bad effects—for instance, thrombosis. But of course the injection has to be given correctly without damaging the intima. Dr Evans also objects to the use of the old Koch tuberculin and thinks that different other tuberculins give better results. I can only say that I have had the best results with the old tuberculin, but I believe that most tuberculins will give good results if they are only used carefully. The question of immunity is not yet clear, and also Wright's theories are not absolutely above reproach. Wright's index is hard to use; for the general practitioner, pretty nearly impossible, and we have to be guided by the practical results, they count more than anything else, as Dr. Power stated very correctly. I agree with Dr. Moffitt who says that it is very necessary to be extremely cautious with the tuberculin. It takes a good deal of experience to use tuberculin. The fact that the tuberculin was not used correctly was the reason that its use was given up by most physicians, and only in the last few years, since we know how to use it, it has been taken up again. I claim to be the first one who recommended such small amounts of tuberculin and the strict avoidance of reactions. My first publication appeared before Sahli's publication, which Dr. Moffitt mentioned.

THE ITCH.*

By DOUGLASS W. MONTGOMERY, M. D., San Francisco.

With a fine eye out for something with vim and snap in it the Scotch took the thistle for their emblem. In like manner the itch, their national disease, is stimulating and lively and has nothing of the languor and introspective misery of the American neurasthenia. This dis-ease, this disquietude, this brisk inconvenience is supposed to be so readily recognizable and so simple to treat as hardly to require serious consideration, and as for its acquisition, that is looked upon in the nature of a joke by those who do not have it.

In regard to the diagnosis one is told to find the burrows and the itch mite, and the incident is closed. These things being found the incident, as far as the diagnosis is concerned, is closed, but frequently, as recently remarked, it is not so easy to find the burrows and the mite.[1] We must also remember it is the simple things that escape one. I know that I myself have made errors in the diagnosis of the itch, as I have had the good fortune to correct some of these at a subsequent visit. At other times I have caught myself on the verge of making a mistake by recognizing some characteristic feature of the malady, for example, a pustular eruption on an infant's feet with the little one vigorously rubbing its

*Read before the Alumni Association of the Medical Department of the University of California, April 10, 1908.

trotters together. In an instance I have in mind, a glimpse of such feet led to the discovery of a long-enduring scabies in a whole family. So by recognizing my positive slips and partial stumbles I am certain that I have made mistakes which have wholly escaped me. And I know by correcting the mistakes of my colleagues that others have erred as well as myself. So much for the reputed ease of diagnosis in scabies.

Concerning treatment, I have seen the itch elude cure with an insistency that became monotonous. Failure to cure is, however, usually due to neglect of some very simple rules, which will be referred to later.

The two chief symptoms of the itch are: Itchiness, and the burrows of the itch mite. The accessory or secondary symptoms are: Papules that are usually excoriated; vesicles filled with a transparent crystalline fluid, and which arise directly from the sound skin and have no inflammatory base, and are situated principally on the fingers and hands; pustules with large ecthymatous crusts; and scratch marks.

The itch may be complicated by urticaria, impetigo, ecthyma, vesicular eruptions, pemphigoid bullæ, eczema, lichenoid eruptions, furuncles, abscesses, lymphanagites and adenites.

The itchiness is usually well marked, and frequently sets in at night on retiring. The patient tosses on a distressful bed until the early morning, when he gets a little sleep, and so on night after night till worn out and hollow-eyed with fatigue. With people particularly sensitive to the mite the itchiness continues during the day also, and many a complaint is made of dignity deeply wounded by an uncontrollable desire to scratch. There are other people who do not suffer from pruritus at all, and this is a matter to be carefully borne in mind, as one member of a family may maintain that he has not the affection, because he is a very little or not at all troubled by it, and by refusing to take the treatment, is a constant source of reinfection for his relatives. Your ordinary self-satisfied layman is strong upon this point, as not being itchy, he clearly can not have the itch. If reminded of the well-known fact that fleas annoy some people intensely, while others not at all, he is still rarely convinced. Jacquet even mentions cases without either scratch marks or itchiness.[2] Furthermore, it must be borne in mind that, after infection, a period of six or eight weeks elapses before a sufficient number of symptoms accumulate to constitute a classic case of the itch. An individual, therefore, even while infected, may with perfect truthfulness deny the existence of all symptoms, and even when examined by a physician, may be passed on as clean.

The burrow or run is made by the female in the lower layers of the cornified epithelium of the skin. It can be seen as a rough, curved furrow, sometimes running over a papule, sometimes having a papule or pustule at one end. Frequently the burrow is black from dirt that settles in its rough surface. It is said that the feces of the animal deposited along the "run" also blacken it, but it is doubtful if they are ever present in quantity great enough to have this effect. These runs are usually best seen on the anterior surface of the wrists, or on the neighboring volar surface of the palms, or between the fingers. Burrows may also be found in the soft skin in the hollow of the foot in infants and women, though very rarely seen in this situation in men. When a burrow is distinct, it is characteristic of this disease, but may easily be simulated by irregular lines in the epidermis filled with dirt. An excellent way of deciding the question is to shave off the suspected epidermis with a scalpel, taking care to go deep enough. Then lay the slice of epithelium on a slide, add a drop of glycerine, place a cover glass over it, and examine with a low power. If the lesion is a burrow, it will be seen with the feces and eggs in it, and if luckily cut, the itch mite may be included. Either the eggs or the mite serve for a positive diagnosis beyond all sources of error.

The *acarus scabiei* or itch mite is a member of the family *arachnida* and is nearly related to the spider. The word acarus, however, means a worm of the earth, and Victor Hugo recounts that Saint Didorus, Archbishop of Cappadocia, wished this word and this word alone to be inscribed on his tomb. This was simply an effective way of indicating the arrogance of the saint's humility, and had no reference to scabies. This itch mite is the sole cause of scabies, and few if any who are exposed to infection are immune. Although none may be immune, yet persons differ widely in the irritation caused by the insect. In some, as before mentioned, the beastie causes almost no inconvenience. In others a few vesicles between the fingers, or a few scattered papules, excoriated or not, may be the only evidence of the affection. But the itch in most people constitutes a serious inconvenience, causing every nerve in the body to jump. It poisons them so that they get huge welts, vesicles and pustules. The industrious scratching causes lesions resembling eczema and lichen, and at the same time inoculates the skin with the pyogenic bacteria from the pustules. In this way impetiginous eczema, with, at times, large purulent bullæ, and even deep-seated infections such as lymphagitis and adenitis may supervene. The severity of the symptoms and the misery endured by these patients is such that in describing their afflictions they frequently disdain all niceties of emphasis and expression.

In those in whom the disease is very light and causes only a few vesicles between the fingers, filled with a clear fluid and arising from a non-inflammatory base, the burrows may be easily overlooked and the affection may be considered a transient irritation. Where pustules are found on the hands and wrists of an adult, a painstaking search should always be undertaken to find the burrows and the itch mite, as the eruption is so likely to turn out to be that of the itch. In fact, in every eczematous or itchy disease of the hands and wrists, it is well to think of the possibility of the itch mite as being its cause. This is particularly the case if there are ridge-like red marks across the front of the wrists.

The location of the eruption between the fingers, the so-called "Scotch fiddle," is well known to the laity. One time in the clinic I suddenly grasped a Scotch woman's hand, and after spreading her fingers and looking narrowly at the web, I remarked without looking up, "God bless the Duke of Argyle." As quickly as the response in the church service, she answered, "With a scratchin' post at every mile." We were instantly in accord, and the diagnosis being completely to the satisfaction of both, there was nothing to do but to lay down the lines for treatment. Frequently welts form a part of the scabitic eruption, and in infants and children this is particularly apt to be the case, and at times so predominently as to give rise to an erroneous diagnosis of urticaria (Finger).

Large, rough, brittle, itchy crusts over the elbow tips constitute another characteristic symptom, though not nearly so impressive to a man who knows his work as a few papules peeping around the anterior folds of the arm pits. The nipples in women are a favorite seat of the disease, and that the same organs in men are not particularly affected constitutes one of the eccentricities of this malady. This brings us to the consideration of a peculiar attitude of mind in this disease. The penis is nearly always affected, and as soon as you ask the patient to expose himself, he almost invariably hastens to say, "Oh! it is not that," thereby assuring you that you need not think he has a venereal disease. A patient with the itch, although he may have quite a severe eruption on the penis, and although he may have acquired his malady by consorting with the "loathly lady," yet rarely thinks of his trouble as being venereal, and seldom mentions the privates as being affected. Whereas a patient with a venereal ulcer, although it may present far less striking symptoms, is almost always deeply moved by his malady. The difference in mental attitude, often striking, I have been tempted to ascribe to instinct. At times the scabetic lesions on the penis look like ulcers and closely resemble venereal ulcers, and frequently have been taken for such. At other times the scabetic papules are well raised, rounded, circumscribed and firm, and resemble the papules of early constitutional syphilis. This mimicry is particularly apt to occur on the glans penis, where one must distinguish between scabitic papules, a papular syphilide, or the papules of psoriasis or seborrheic eczema. The problem may sometimes be solved by noticing that a burrow runs over such a papule. The difficulties of diagnosis may be increased by syphilis and scabies being actually present together. Scabies is a disease almost always caught in bed; either in bed with a person having scabies, or in a bed previously occupied by a person having scabies. Syphilis is also contracted in bed. In both diseases that promiscuous female, the prostitute, is an important bearer of infection.

As a patient stands before you even the locations of the eruption are characteristic; on the hands, at the wrists, at the axillary folds, on the belly, on the penis, with the face clear of trouble. Then, as the patient wheels round, the back down as far as the loins is seen clear of eruption, with a papular outbreak on the nates and in the folds just below them, and a rash in each popliteal space. There are also over the elbow tips dirty, heaped-up, irregular crusts quite different from the well circumscribed buttons of psoriasis. As before mentioned, the nipples in women are frequently affected. If a papular impetiginous eczema occupies the above mentioned sites, even if burrows are not found, the diagnosis of scabies may be made.

In regard to differential diagnosis a dermatitis among cement-workers, caused by the very active chemicals in cement, must be considered. During the past few years cement has grown more and more in favor as a building material, and physicians must expect to encounter an increasing number afflicted with this dermatitis. It is particularly apt to give rise to a crusted eruption between the fingers, that strikingly resembles that of scabies.[3]

Up to 1898 scabies was not frequent in San Francisco. In that year, however, the armies on their way to the Philippines passed through this city, and there was an immediate increase of both syphilis and scabies.

Having lost all the notes of my cases in the great fire, I can not give the exact figures in my own practice, but of the increase I am certain, because of having previously arranged my histories and remarking on this circumstance. Again, immediately after the fire, there were a remarkable number of scabitic infections, evidently due to the derangement of the sleeping quarters of the town, and the promiscuity of camp life. One of my patients told me that he had to go down country after the fire and dwell with a Portuguese family. Out of compliment they gave him, as underwear, part of a bride's trousseau. He got the itch and was grieved over it.[4] The prostitute, of course, spreads the disease in the line of her business, but sympathy has also its victims. One of my patients, a young girl, thought to comfort a woman friend who had influenza, by resting near her in bed. The friend had the itch as well as the grippe and imparted both to her visitor. As a profession we owe a great deal to sleeping cars as disseminators of the itch among a class of patients who can afford to pay for treatment. Country hotels are also often admirably fitted out in this respect, and since the introduction of automobiles, the victims seem to me to be more frequently of a better class. This disease is not transmitted in the ordinary course of life as by shaking hands, or to physicians in their examination of patients.

The intensity of the affliction may vary from time to time, as for instance during the course of any of the severe fevers, when the eruption, even the burrows, will totally disappear, to reappear again, however, on the recovery of the patient.[5] But, through whatever fluctuations the symptoms of scabies may pass, the disease never spontaneously dies out.

To my mind, the treatment of scabies as given in the text-books is too rigorous. The parasiticides themselves are irritating, and when applied to the

raw lesions on the skin produce a variety of discomforts. When, in addition, these parasiticides are combined with such ingredients as soft soap and carbonate of potash, with a trifle of chalk added to the ointment to make it gritty, the patient feels that the adjective "unctuous" is not applicable to the composition in question. He may, however, be able to bear the smarting with stoicism on the general surface, but when it comes in contact with the tender skin of the genitals it is quite a different matter. In fact, many of these prescriptions look more like a cure for lassitude than for the itch. Frequently a doctor requires a distinct jolt to rip him out of a conventional way of prescribing. Some years ago a patient was sent me by Dr. Kaspar Pischel. I gave him a classic prescription of tar, soft soap, sulphur, prepared chalk and lard. After applying this ointment he called in a less strenuous physician, who got a much larger fee and more praise. I have no doubt I cured his itch, but I did not gain his affection and esteem, and Dr. Pischel, for long after, never met me without upbraiding me. I learned the lesson. Shortly afterwards I was called in consultation by another physician who had copied the identical prescription from a treatise on diseases of the skin. I was able to advise him out of the fullness of my experience, but did not get my fee for that, either.

The principal parasiticides used for killing the sarcoptes are sulphur, betanapthol, balsam Peru, creolin and styrax. Epicarin and petroleum may also be used. A simple sulphur ointment, if intelligently applied, and for a long enough time, kills the parasite, and usually with little inconvenience to the patient. As remarked by Malcolm Morris, even the simple sulphur ointment of the British Pharmacopœia (¼) is too strong, and a half a dram or a dram of sulphur to an ounce of lard is quite strong enough. The patient should first take a hot bath with plenty of soap, and then be directed to rub the ointment particularly into the favorite locations of the parasite for nine successive nights. During the whole course it is better to wear a full suit of woolen underwear, so that the ointment by getting into the underwear may be returned to the skin and rubbed in with every movement of the body. The patient should therefore be directed to wear the same undershirt and drawers during the whole nine days and nights of treatment, only taking off the garments to rub in the ointment. In such a treatment it is particularly necessary to rub the ointment well into the hands and wrists, as these do not receive the benefit of the constant application of the salve by the clothing. In women it must also be remembered that the drawers, being open at the back, do not come well into contact with the gluteal folds, which should therefore receive the same special attention as the hands. Although the ointment is only rubbed into the points of election previously spoken of, yet these points are so widely distributed that the underwear spreads it over the entire clothed body and limbs. Furthermore, it makes a better impression on the patient, and one is more apt to get one's orders carried out if these certain points are explicitly designated for attention.

Once a patient entertained me with an account of a treatment advised by a chiropodist. Pork rind was to be dipped into sulphur powder and rubbed into the skin. He was neither to bathe nor to change his underclothing during the entire course, and on the expiration of the time of treatment, two weeks, he was to take a warm bath containing washing soda. The treatment is not a bad one, as pork fat and sulphur make a kind of sulphur ointment. Like all folklore medicine, however, it had to contain an unusual or wonder element, which in this instance was furnished by especially designating the rind of pork.

Is is very rarely necessary to have the parasiticide applied above a line running paralled with the lower jaw, as the presence of the itch mite is practically unknown on the face and head in children and adults, and only rarely occurs in these situations in infants. In children and adults there may be, very rarely, some coincident pyogenic infection of the face.

I have seen repeated failures to cure because of the treatment being confined to one or two localities where the eruption was most marked. Peculiarities in the course of the disease lend themselves to the commission of such an error. The affection may rage for some time, and then for some unknown reason die down and only present a few insignificant symptoms, or the eruption may be severe in one or two localities and mild elsewhere. The patient almost always pays copious attention to the severely attacked locality, and frequently causes there an intense local medicinal dermatitis. He may kill out, each night, the itch mites in this particular region, but maurauding bands come cheerfully in from neighboring colonies, and undo the work so painfully carried out. In all cases, therefore, a general treatment for the itch must be instituted, and at the same time any severe local inflammations may be controlled, for example, by starch poultices, to which is added about five per cent of boracic acid powder. At times we have to treat a patient for scabies who is suffering from a broken limb, and find the beasties quite at home under the restraining splint. Such a combination gives us an insight into the frame of mind of an ancient armored knight affected with the itch. No wonder they fought! Fighting would be a diversion. In a case of scabies developing under a splint, Sherwell's plan of using sulphur as a dusting powder would be invaluable. Sherwell advises the use of sulphur as a dusting powder, to the exclusion of ointment, in the general treatment of scabies. I have never used it so, but have often advised it as an adjunct. For instance, in a household where many members are affected with the itch, it is often advisable to order sulphur dusted into all the beds, lest some lightly touched but recalcitrant individual should escape cure and reinfect his comrades.

Sherwell's method as given by Pusey runs as follows: "Bathe in the evening, using an alkaline or sand soap over the tougher parts. Then rub the body lightly with washed sulphur; half a dram is

sufficient for one person, and hard friction is not necessary. About half a dram of washed sulphur should also be scattered between the sheets of the bed, and the clothing and the bed linen should be changed every two or three days. The amount of sulphur necessary does not produce any irritation, and the cure is effected in about a week." [6]

Sulphur, however, used in this way may irritate the eyelids as the following example in this kind will show. One of my patients, with a weakness for frequenting strange beds, was advised by me, after vainly admonishing him in regard to his course of life, to dust himself with sulphur, on occasion, as a prophylactic measure. The substance acted so irritatingly on his eyelids as to compel its disuse.

It may here be remarked that if mankind would only heed the advice of Thomas á Kempis, it would not alone escape the itch, but many other complications as well. Our English translation of the admirable passage here referred to is somewhat hazy, but directly stated it runs as follows: "Avoid evil women, and as for the good ones commend them to God." As Anatole France remarks, it is wonderful that a simple monk, far removed from the intrigues of courts and the intricate life of cities should evolve a rule, so simple, so inclusive, and if adhered to, so effective, as to confound all that has ever been said on the subject of the simple life by the erudite, the rich, the powerful, and the noble; nevertheless, while repeating the good monk's admonition, as occasion arises, it would, in the meantime, be well for physicians to bear in mind ways of treating the disease in question. And so we will proceed.

Balsam Peru is an excellent remedy for the itch, and it is often used in the same ointment with sulphur as for example,

R.

Sulphuris precipitati		
Balsami Peruviani	a a	dram. iii
Lanolini		
Vaselini	a a	oz. iss

M.

In cases where, as in infants or in severe local dermatitis, great care must be taken not to injure the skin, it is often desirable to use Balsam Peru alone, as in the following:

R.

Balsami Peruviani		1 to 2 oz.
Lanolini		
Vaselini	a a	1 oz.

M.

Julien highly recommends the method which he saw used in Italian clinics, of painting patients with balsam of Peru without any preliminary baths or other preparation. It is best applied at night, and followed in the morning or later by a bath. It usually causes no irritation whatever, and is effective. It should not be forgotten, however, that in rare instances balsam of Peru produces violent dermatitis. [7]

Matzenauer give the following directions in regard to the application of balsam Peru or styrax: A hot bath with plenty of soap should first be ordered, and after the skin is perfectly dry the balsam Peru is to be well rubbed in with a piece of flannel. As it easily spreads, a very small amount, 8 or 10 grams according to Mosler and Piper, is enough for each rubbing. The application should be made twice a day for two succeeding days. The patient should neither bathe or change his underclothing for four or five more days, after which a bath is taken. The undergarments may be thrown away as they are rendered unwashable by the balsam.

In the same manner styrax may be applied, prescribed according to the following formula:

R.

Styracis liquid		25.00
Spts. vini. rect.		10.00
Ol. oliv.		65.00

M.

Or the styrax may be combined with balsam Peru.

R.

Styracis liquid		80.00
Balsam. Peru.		20.00
Spts. vini. rect.		
Glycerini	a a	16.00

Although sulphur, balsam Peru, and styrax are excellent remedies for scabies, yet there are other fine agents, such as creolin and betanapthol. An ointment composed of:

R.

Betanapthol		10.00
Lanolini		
Vaselini	a a	75.00

M.

may be used in the same way as a sulphur ointment. Betanapthol has been known, by absorption, to irritate the kidneys, so that one would hesitate to prescribe it when the patient is suffering from Bright's disease, and in any case due care should be taken in using the remedy.

Through Dr. Werther of Dresden, I first became acquainted with the use of creolin, who uses it in the following combination:

R.

Creolin		10.00
Saponis viridis		30.00
Adipis benzoati	ad	100.00

M.

S.—Rub in morning and evening.

I have used it, leaving out the soft soap, and have found it a most satisfactory remedy.

In my personal experience, as I have previously indicated, I have found the ointments as usually recommended for the itch too severe, and have preferred to treat my patients a longer time and less drastically, both to my contentment and to theirs. Another modification I have found most comforting is to change the parasiticide during the treatment; to use a sulphur, balsam Peru ointment for three days, a betanapthol ointment for further three days, and a creolin ointment for the remainder

of the time. In this way, if a person be delicately sensitive to sulphur and gets a commencing sulphur dermatitis, this will subside under betanapthol, and before the betanapthol has time to irritate severely, it, in its turn, is discontinued and creolin is used.

In many instances a dermatitis caused by sulphur can be controlled by a judicious use of talc powder or of Lassar's paste. A good formula for Lassar's paste is:

R.

Acid. salicyl.		gr. xx
Amlyi.		
Zinci. ox.	a a	oz. ss
Glycerini		oz. i

M.

S.—Apply twice a day.

At times a puritus, or an urticaria, or an eczema may persist long after the scabies is cured. These obstinately annoying eruptions may frequently be controlled by Boeck's paste, to which is added ten per cent of liquid carbonis detergens. The formula reads as follows:

R.

Liquoris carbonis detergentis		30.00
Amyli.		
Talc.	c c	40.00
Glycerini		20.00
Gummi Arabici		1.00
Liquoris plumbi subactatis		4.00
Aquæ		200.00

M.

S.—Use as a lotion two or three times a day.

The patient's underclothing should all be boiled; this is disinfection enough. I have never found it necessary to disinfect the outer garments, with the exception of gloves. As for the gloves that is an important matter, and orders should be given to search out industriously all the gloves in the house, burn those that are old, and dust sulphur powder into the still useful ones. Gloves, in a disease that shows such a predilection for the hands, should be admirable carriers of infection, although I have never personally found them to be so. Julius Heller thinks it would be wise for the public health authorities to disinfect gratis the dwellings of the poor that are infested with any of the animal parasites, such as pediculi and acari.[8] Several other remedies besides sulphur, betanapthol, balsam Peru and creolin have been advised for scabies. Epicarin is apt to be quite irritating to the skin. Petroleum is so nasty and may cause such severe irritation of the skin that it is only used in the very poorest practice in poor countries.

Ichthyol has been used in baths, but such a quantity has to be employed as to make treatment unnecessarily expensive; furthermore, the method has no special advantage, except that it does not irritate the skin.[9] I have never used ichthyol as an antiscabitic. Franz Nagelschmidt recommends theophinol, a sulphur derivative, to be used in baths and as a salve.[10] Michel Steiner speaks favorably of tardermasan in the treatment of scabies.[11] Walter Schneider uses anthesol as a substitute for tar to control the itching in scabies.[12]

As I have never employed theophinol, tardermasan or anthesol, I can not speak either for or against their use.

The principal object of this paper is to ameliorate the condition of those having the itch by modifying the rigors of treatment. Those dear scabby ones deserve consideration, at our hands, for notwithstanding their torments, they are a good-natured lot. Many diseases tend to sourness, and to the nursing of wrath against the world and especiall against the physician who endeavors to help them. This is rarely the case with those having the itch. We ought, therefore, to take especial pleasure in lightening their burdens. I often think of the kindly Hypocratic maxim: "We must never do our patients any harm," and in the case of scabies, it might be enlarged to say with Rudyard Kipling, "and not afflict them with any of the unnecessary hells."

(1) Cutaneous Therapeutics by Hardaway and Grindon, p. 487.
(2) Annales de Therap. dermatol. et syph. Vol. 6, No. 88, Ref. in M. f. Prak. Derm., 1 Okt., 1906.
(3) Le Dermatose des Cimentiers per Rene Martial. Revue Pratique des Maladies Cutanees. Juillet, 1908.
(4) Oliver S. Ormsby has drawn attention to the increase of scabies in the United States. Journal of the Am. Med. Assoc., XLVI., 1906, No. 21. J. Nevins Hyde of Chicago has also written on this subject.
(5) Diseases of the Skin by Jarisch. Edited by Matzenauer.
(6) The Principles and Practice of Dermatology, by Wm. Pusey, 1907.
(7) Loc. cit.
(8) Oesterr. Krankenpfleg, Z't'g., 1907, No. 6. Abstract in the M. f. prakt. Dermat. Okt., 1907, p. 375.
(9) Ch. du Bois. Abstract in M. f. prakt. Derm., 15 Juni, 1907, S. 634.
(10) M. f. prakt. Dermat., 1 Feb., 1906, S. 145.
(11) Berlin klin. Wochensch., 1906, No. 11. Abstract in M. f, prakt. Derm.
(12) Deut. Arzte. Z't'g, 1905, No. 6. Abst. in M. f. prakt. Dermat., Bd. 42, S. 592.

ON TRUE INTESTINAL DYSPEPSIA.*

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By true intestinal dyspepsia is meant those conditions of the intestinal tract characterized by disturbance of the intestinal function. It may be purely functional, though rarely so, and it may be associated with anatomical changes in the mucous membrane, which is very frequent. The relation of organic to functional disease is close. Either one may be primary. Those in which the functional disease precedes, and the organic disease, most frequently a chronic catarrh, follows as a secondary manifestation, belong to this group of true intestinal dyspepsia. Primary organic intestinal disease with secondary functional disturbance, which is common, is not so classified. Yet with certain forms, especially chronic catarrh, the interrelationship may be so close as to deny differentiation. In these cases it is justifiable to speak of them as true intestinal dyspepsias.

From the nature of the foodstuffs concerned in intestinal digestion it is logical to speak of two large types of intestinal disturbances; 1, those disturbances which concern all classes of foodstuffs (dyspepsia

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intestinalis universalis), and 2, those disturbances which concern one or more, but not all, of the food classes (dyspepsia intestinalis partialis), following Einhorn's nomenclature. This latter group may be divided according to the type of food or combination of types of foods concerned into (a) disturbed digestion of proteids; (b), carbohydrates; (c), fats; and (d), various combinations of any two of these foods. Two more groups may for different reasons be added with propriety, namely, 3, disturbances of the intestinal flora, with especial reference to the saccharo-butyric putrefaction described by Herter; and, 4, certain subjective disturbances which are associated with neither ascertainable functional nor organic changes and which may be looked upon as true nervous intestinal dyspepsia. The two latter forms I will not discuss at this time.

Soon after the beginning of the use of the stomach tube in the diagnosis and therapeutics of stomach diseases by Kussmaul (1869) and its adoption by Leube, Ewald, Riegel, Boas and all others, efforts have been made to test the function of the intestinal tract in somewhat similar ways. But the difficulties were much greater, and the factors entering into intestinal digestion (motility, secretion, resorption, bacterial decomposition) were much more hidden, so that years went by without material progress being made in this direction. Within the last four of five years only, through the work of Adolph Schmidt, Strasbuger, Straus and Pawlow for the most part, has intestinal digestion been studied by other than empirical methods. To the former clinician do we owe the elaboration of a method of intestinal testing, which permits, through the use of an intestinal test diet and the examination of the stools obtained from it, the comparison of the abnormal with the normal bowel function. The stool obtained from this diet in the healthy individual is, within practical limits, of stationary composition. Therefore certain deviations from the normal as regards the digestion of individual foods, pathologic products, etc., may be determined. The underlying principle of the diet is that it contains all primary foodstuffs in proportionate amounts and of sufficient calory content, and that nothing be eaten which can not be recognized in the stool. The details of the diet as I have transposed it from the German dietary for my own use I have given in a former paper and need not repeat. Some objections have been raised against this method by physicians. It is true that it requires from two to four days living on the diet before the stools should be examined, and both patient and physician may dislike to spend that amount of time. For this reason and the lack of knowledge of stool analysis it has not been generally adopted in practice. For this reason, also, Einhorn of New York introduced in 1906 his bead test in the hopes of simplifying Schmidt's method and still obtaining the same information. But on the other hand I have not found this to be a disadvantage. Patients who suffer real distress enter into the spirit of the investigation and almost without exception carry out the details with willingness and care. In some instances it is of aid in a general diagnostic way also, for with true stomach or intestinal disturbance the patient is apt to experience increased distress, whereas this is seldom seen in the purely neurasthenic or the simple undernourished state, conditions in which the diet is oftentimes indicated.

The above mentioned test beads of Einhorn have likewise not been adopted in general practice to any extent, partly for the same reasons. This method consists of the use of six food substances; catgut, fishbone, meat, potato, mutton fat and thymus gland, the latter because of the abundance of nuclei in it, fastened to small beads and arranged in a chain along a short silk thread. Several chains are swallowed, usually after a meal, and the beaded threads again recovered in the stool, and the remains, if any, of the attached foods examined as to the degree of digestion undergone by each. The method has the advantage of being of simple execution, and what seems to be of more actual value, it is a sharper indicator of intestinal motility. But in the main I have preferred the use of the Schmidt diet and still continue to employ it as a routine.

Simple functional intestinal dyspepsia concerns most frequently the digestion of starch. The patient usually complains of indefinite neuralgic pains throughout the body, more or less distress through the bowels, loss of appetite, easy fatiguability and other symptoms commonly grouped as neurasthenic. The stool, however, is frequently of a foamy character, yellow in color, acid in reaction, with a strong odor of butyric acid, and gives a strong reaction for fermentation with the Strasbuger method. Microscopically starch cells staining blue with iodin are seen in more or less abundance. Mucus does not occur in the early or mild cases. Later it may be found and the products of intestinal inflammation: serum, mucus, desquamated epithelium, which easily undergo putrefaction, may be sufficient to give the stool a slightly alkaline reaction, with a positive putrefaction test. A purely functional isolated disturbance of fat digestion, according to Salomon, does exist. It is nevertheless rare, and one must be satisfied of the absence of pancreatic and gall bladder disturbances before it can be justifiably assumed to be present. Disturbance of proteid digestion alone is less frequent than that of starch. According to Einhorn it is very rare. My own experience does not teach me that it is very rare, if one is justified to diagnose this condition from the presence in the stool of an abnormal amount of microscopic, undigested, striated muscle fibre alone, without the occurrence of starch, fat, connective tissue and nuclei, and a stool of alkaline reaction that gives a positive reaction for putrefaction. This type of dyspepsia is prone to produce a secondary catarrh, the products of which, undergoing decomposition, will intensify the alkaline reaction and putrefaction test. Indeed, it is quite impossible to say that this type of case is not always a primary chronic intestinal catarrh, for the products of inflammation may be digested and absorbed, and consequently no evidence of it appear in the stool.

Schmidt, in a recent paper before the Twenty-fifth Congress for Internal Medicine, held this year in Vienna, emphasized this point. Combined disturbances for different foods are fairly frequently met with as Einhorn's published reports demonstrate. But, on the other hand, the above criticism applies with greater force to the cases of this group. They may all be primary intestinal catarrhs with secondary functional disturbances.

The following selected cases will illustrate some of these types of intestinal disturbances:

Case I. E. G., aged forty years, has complained for nearly three years of excessive bloating, both in the morning before eating and also during the day after eating. The feeling of distention, the almost constant passing of flatus, slight colic with relief after the passing of flatus, and general lassitude and inability to concentrate his mind upon his work are distressing symptoms. His appetite has been good and his normal weight maintained. His bowels are moderately loose, though never diarrheal. He is excessively nervous. Physical examination is normal except for a palpable slightly tender colon. An Ewald test breakfast removed in fifty minutes shows normal ferment relations. The stool from the test diet shows a large formed, yellow, gaseous, butyric acid smelling stool of slight acid reaction. Some undigested starch stains blue with iodin and some connective tissue and microscopic poorly striated muscle fibre is present. The two latter are not beyond normal limits. A fair reaction for fermentation is obtained. The bile salts are oxydized and there is a little finely divided mucus. Fat is normal and the nuclei are gone.

For the patient was prescribed an unirritating diet free from most starches, hot compresses, which necessitated some rest on the back during the day, warm baths, and a temporary course of bismuth salicylate. Relief was almost immediate and has remained permanent for a year and a half with the exception of a few days, at one time, after drinking beer. This may be considered an example of intestinal dyspepsia with faulty starch digestion associated with a mildly spastic colon.

Case 2. Mrs. A. A., aged forty-two years, began gradually to complain of edema of both legs, flatulence in early morning and after eating, periodic constipation and diarrhea, irregular pains through the back and legs, foul breath and coated tongue and a general sense of dullness and langour. Periods of severe illness alternate with others when patient feels better, although never is she free from distress. She has no knowledge of distinct foods disagreeing with her except acids, which will precipitate diarrhea. She uses both cathartics and enemas somewhat. Seven years ago patient underwent an operation for tubal pregnancy without change in the edema of the legs. Physical examination reveals a well nourished, healthy looking woman. All details of examination are normal except a palpable, slightly tender colon, edema of both legs and somewhat exaggerated deep reflexes. An Ewald breakfast removed in fifty minutes shows: F. HCL.=12.5, T. A.=25.5, rennitzymogen 1—160+, pepsin normal. Twenty-four hours' urine shows: alkaline reaction, 1,028 sp. gr., 23 ounce, total amount, total solids, 708 grs., albumen, sugar and indican absent, and sediment of vaginal epithelium and triple phosphate crystals. No casts. The stool analysis after the use of the test diet shows: semi-formed, alkaline, foul smelling stool containing fair amounts of striated muscle fibre and some connective tissue. Starch and fat are well digested. The bile salts are oxydized. There is a well marked reaction for putrefaction, and a very little fine mucus. Patient received a carbohydrate diet with the tentative admission of milk and eggs, bismuth salicylate, agar-agar, hot compresses and rest at periods during the day on the back. The use of hydrochloric acid for two days brought on an acute diarrhea and was stopped. Relief was very marked. The soreness through the abdomen and the neuralgic pains disappeared, the bowels became regular and the edema of the legs quite left. This I take it may be an example of proteid intestinal dyspepsia.

The following two cases, very briefly outlined, are likewise instances of disturbed proteid digestion:

Case 3. Mrs. C., aged thirty-three years, has suffered for some years with bloating, belching and pyrosis after eating. There is a tendency towards alternating looseness and sluggishness of the bowels, with occasional soreness through the abdomen. Meats, milk and eggs distinctly give distress in the form of attacks of "acute indigestion." Patient has suffered from an intractable acne of the nose for a year and a half, which seems to be dependent upon the bowel condition. Physical examination is normal aside from the acne. The woman appears well and strong. An Ewald breakfast shows a normal stomach state. Stool analysis from the test diet shows a soft formed alkaline, foul smelling stool containing striated muscle fibre, some slight mucus and a well marked reaction for putrefaction. Numerous crystals of the triple phosphates are present and the bile salts are oxydized. Fat and starch are well digested. Similar treatment was instituted as in the former case with the addition of tincture of nux vomica. Improvement of the bowel functions and relief of abdominal distress was well marked. The acne on the patient's nose remained just as distressing to her as ever.

Case 4. H. P., aged thirty-one years, began to suffer severe periodic neuralgic pains in the legs with diffuse distress through the bowels about five years ago. These attacks always being associated with constipation, the relief of which afforded the quickest relief for the pains. Physical examination is quite normal. The corneal reflexes are lost and the tendon reflexes are exaggerated. Stomach and urine analysis normal. Stool analysis from the test diet shows a formed, hard, alkaline, foul stool, containing some fine mucus and no remains of food except striated muscle fibre. A well marked reaction for putrefaction exists. The bile salts are oxydized. Treatment over several months was unavailing. Patient continued to have his attacks of pain and continued to take cathartics for relief.

Case 5. Mrs. C., aged fifty years, has complained for several years of irregular pains in hands and toes. There is some feeling of distress and bloating after eating heavier foods from which she abstains. She does not use milk or sugar. Buttermilk is well borne. Examinations throughout are normal except for slight periarticular thickening about the phalangeal joints and the condition of the stool. The latter shows a formed, yellowish, slightly acid stool, containing some striated muscle fibre, some connective tissue and some starch. A moderate amount of fine mucus is present. The bile salts are oxydized and the fermentation test is not marked. In this case we note the combination of proteid and starch indigestion with the presence of distinct mucus. A bland diet free from any heavy meats, vegetables and milk was prescribed with the addition of agar-agar and bismuth salicylate. Considerable relief of all symptoms was obtained for some time. A forced trip across the continent again brought on the distress, which is now subsiding.

Case 6. W. W., aged forty-seven years, has suffered for some years with much of the same symptoms as case No. 3. He has suffered repeatedly from herpes. Once severely with herpes, which extended over the right side of the face and neck as far as the median line and on the scalp. The stool analysis

shows the presence of striated muscle fibre and a small amount of starch in an alkaline stool with a putrefaction reaction. There is a very small amount of fine mucus present. An indifferently carried out line of treatment has resulted in the regulation of the bowels and the amelioration of the symptoms to a certain extent.

The following two cases are examples of chronic intestinal catarrh associated with disturbed digestion of proteids. Whether the organic disease preceded the functional or vice-versa, it seems to me quite impossible to say. At any rate, it would appear justifiable to group them among the true intestinal dyspepsias.

Case 7. Mrs. K., aged thirty-seven years, has suffered for sixteen years with abdominal distress independent of eating, periodic diarrheas and constipation, neuralgic pains through the back into the perineum, painful swelling and stiffness of the hands and feet. The stools at times are gaseous and contain much mucus. Patient has been utterly miserable. She has undergone five operations of a reparative nature without any relief. Her general appearance has been good and her weight uniformly in the neighborhood of two hundred pounds. Physical examinations show normal findings with exception of general tenderness along the line of the colon and the condition of the stool. The urine for twenty-four hours and the stomach contents are normal. Stools from the test diet contain much fine mucus, some coarse mucus coating the fecal masses, and are alkaline in reaction with strong reactions for putrefaction. Some striated muscle fibre is present, but other foods have disappeared. After much painstaking care in her diet and general measures it was found that with the absolute exclusion of all meat, milk and eggs and the use of alphozone, grs. 1 t. i. d., patient experienced much relief. She has lived in this way for over a year and is better than she has been for a long time. In April of this year she reports still some soreness of the flesh and swelling of the hands. The phalangeal joints have a beginning periarticular thickening. An analysis of the ordinary stool shows the presence of some mucus and a neutral reaction. All in all, the patient is improved.

Case 8. A. L., twenty-four years of age, has suffered for two years with a sense of abdominal fullness and pressure in the early morning and also before and after meals. There is a general sense of malaise and weakness, with loss of appetite. There is some constipation. Only rarely is there looseness of the bowels, which usually follows the taking of cold drinks, such as beer. There is a loss of about fifteen pounds in weight. The patient looks healthy and examination shows normal findings with the exception of the stool. The latter from the test diet contains much mucus of a fine disseminated type and some meat fiber. Other foods have disappeared. The stool is alkaline and gives reactions for putrefaction. A carefully maintained bland carbohydrate diet with the addition of salicylic acid, milk and hot compresses to the abdomen has resulted in slow but progressive improvement. In April of this year, one year after the beginning of treatment, patient reported that he had regained his weight and had felt symptomatically well all winter. Analysis of the ordinary stool showed some mucus and faint alkaline reaction. He remains quite well.

Regarding the universal type of intestinal dyspepsia, Einhorn states that he does not doubt but that it exists with the presence of gastric juice. I have not met with it, nor have I found it reported in the literature. Two cases under my observation have been associated with atrophic gastritis. The prognosis of this form as a rule is not good.

Certain important general principles may be laid down to govern the treatment of these cases. The diet should be bland, easily digested and selected, when possible, according to the information gained by the stool analysis. A faulty starch digestion demands the removal of much of the carbohydrates. Faulty proteid digestion, especially associated with catarrh, indicates the removal of all putrefiable foods. This is often difficult and the course of such a case may at times appear disappointing. Yet on the whole much benefit can be obtained. The addition of small quantities of salicylic acid to milk has been much used by Schmidt. I have, I think, obtained better results from bismuth salicylate and, alphozone. Bed, rest and hot compresses to the abdomen are valuable adjuncts. Artificial digestants as pancreon and takadiastase have not afforded much relief to my patients and I have ceased using them as routine.

TREATMENT OF MALIGNANT GROWTHS BY THE HIGH FREQUENCY SPARK.*

By D. FRIEDLANDER, M. D., San Francisco.

Although the priority in the utilization of the high frequency spark, in malignant disease, must be accorded to Strebel, it was not until 1906, when Keating Hart, of Marseilles, read his paper on the subject before the Congress for Electrobiologie, that any widespread interest was manifested in this treatment.

Since then, however, various articles have been written on this subject, a few condemning it, but the great majority, including articles by Czerny, Doyen and Pozzi, highly endorsing it. That it is the best method yet brought forward for the treatment of the rodent ulcer, as to rapidity and cosmetic results, there can be no doubt. It is more rapid in action than the X-ray, has none of its dangerous qualities, and the cosmetic result is, if anything, far superior. Furthermore, the X-ray acts better on epitheliomata of the prickle-cell type than on the basal cell form, while the high frequency spark acts equally well on both types.

In comparison with surgery the cosmetic results are incomparable, regardless of the general anesthetic required for the operation; likewise it stands before the various caustics in its comparative painlessness and cosmetic results.

In deepseated epitheliomata, the results are yet subjudice, the longest result having a duration of three years, but this method has shown itself of sufficient value to justify a thorough test.

The apparatus consists of an Oudin resonator, preferably equipped with a petroleum condenser, which is attached to a 12 or 16 inch induction coil. The resonator should contain sufficient windings to produce a unipolar spark of 6-8 inches from a metal pointed electrode.

* Read before the Cooper College Science Club.

For rodent ulcer work, no anesthetic is necessary, since the spark renders the lesion anesthetic after the first few seconds. A pointed glass or metal electrode is used, with a spark length at 2-3 inches, and this spark is played on the surface of the lesion for from 40 seconds to 1 minute. In order to confine the spark to the area to be treated, I have experimented with cardboard, sheet rubber, vulcanized rubber and dentist's modeling compound, and find the last to be most satisfactory. This, on being heated in water, becomes perfectly pliable, a mold is then made of the part and allowed to harden. The under surface retains the contour of the lesion and the impression so obtained is cut out. The mold fits the part exactly, requires no assistant to hold it, and the spark will strike through the opening only.

The treatment of deeper malignant neoplasms, of which, as yet, only recurrent and inoperable carcinomata have been utilized,—is more painful and must be conducted under general anesthesia. The procedure is as follows:

The spark, of 6-8 inches length, is played on the lesion to be treated for 10-40 minutes, after which the sparked area is removed with the curette or the knife, and the spark again applied for 10-15 minutes. The parts are then approximated, if possible, leaving a gauze drain, or allowed to remain open with a sterile dressing. Any hemorrhage occuring, is quickly and easily controlled by the spark. The patient, during this treatment, becomes highly charged with electricity and any contact with a metal body will cause a burn, and for this reason a wooden operating table must be used and likewise a glass or vulcanite anesthetic mask. A unipolar, copper, pointed electrode is used in this treatment and Keating Hart combines this with a carbon dioxide spray, which plays on the surface of the area during treatment, with the idea of reducing the cauterizing effect of the spark so far as possible, as he claims the cauterizing effect is unnecessary. Placing the body in the circuit with a glass electrode, increases the action of the spark.

On the skin we find, as a result of the treatment: (1) Anemia, (2) Cutis anserina, (3) Rupture of the subcutaneous vessels, (4) Vesication, (5) Loss of epidermis, (6) Eschar.

On open surfaces we find: (1) Anemia, (2) More or less hemorrhage due to rupture of vessels by the spark, which is readily controlled by the same means, (3) Eschar.

Section of tissue following treatment on normal skin shows: (1) A round cell infiltration, (2) Hemorrhage into the tissues, (3) According to Czerny, a vacuolization of the cells of the intima of the arteries.

In malignant growths the section shows the structure of the growth disorganized, the cells are swollen and vacuolized, and the spaces between the cells and connective tissue filled with blood.

The action on the tissues is mechanical, thermal and chemical.

If we are to accept the views of Keating Hart, Czerny, F. R. Cook and Benckiser, who claim that the high frequency spark, like its allied treatment, the X-ray, has a predilection for embryonal rapidly growing cells, then we can, to a certain extent, account for the favorable action of the spark. One thing is certain, the connective tissue of the stained, treated specimen still stains distinctly and clearly, while the cancer cells become a disorganized mass. Furthermore the spark mechanically destroys a certain amount of tissue, also causes coagulation of the albumen, and it is an intense stimulant to the connective tissue, as shown by the rapid granulation following the treatment, and further, it is followed by an intense lymphorrhea, which probably washes out a large proportion of the disorganized tissue.

The results of this treatment in the rodent ulcer cases is superior to any other method I have yet seen. The average duration of the treatment is 40 seconds to 1 minute, one to five treatments are necessary, the pain is not sufficient to necessitate the use of an anesthetic, and we obtain results within two to eight weeks. Particularly in those cases with a hard border, or surrounded by epithelial perles, cases that are ordinarily most resistant to the X-ray, are the results brilliant. In a series of 13 cases I have treated, the results are as follows:

1 healed, 15 months.
1 healed, 12 months.
4 healed, 8 to 11 months.
2 healed, 5 to 7 months.
1 healed, 3 months.
4 still under treatment, all showing positive improvement.

Of these 2 had been under treatment with X-ray for 12 and 15 months, respectively, and showed no improvement. One was a recurrence on the site of a former lesion.

In a series of 22 cases of malignant growths, Keating Hart reports the following results:

Six rodent ulcers healed: the remaining 16 cases were deep seated lesions divided as follows: 6 breast, 2 deep skin epitheliomata, 4 of the tongue and mucous membrane, 1 larynx, 1 lymphosarcoma of the throat. Of the above, 3 died during treatment and 7 were improved and 6 healed.

Pozzi reports: 2 epitheliomata of the face, 1 carcinoma of the tongue, 1 epithelioma of the rectum healed for 8 months. Also, 1 epithelioma of the gums, 1 epithelioma of the labium majus, 3 carcinomata of the mammæ healed for 8, 10, 15 months.

Czerny reports results in an epithelioma the size of a dime, with leukoplakia on the mucous surface of the cheek, an epithelioma of the face and 3 rodent ulcers on the nose. The remaining cases of his series were inoperable or inoperable recurrences and while he has had no permanent results, he finds relief of pain and hemorrhage and cleansing of the ulcerated surfaces.

Whether or not the high frequency spark is a curative agent or merely a palliative one, remains to be seen,—time and experience alone can determine that, but any agent that will cause the ces-

sation of the discharge and hemorrhage of an inoperable or recurrent carcinoma, together with relief of pain and healing of the ulcerated surfaces, is certainly an acquisition to our therapeutic armamentarium and worthy of a thorough trial.

REFERENCES.

Saalfield—Berliner Klin. Wochenshrift No. 25—1907.
Cook, F. R.—Medical Record—Dec. 21, 1907.
Pifford—N. Y. Med. Journal—June 16th, 1906.
Bowie—Lancet London—1907—II—318.
H. E. Cook—High Frequency Current—Balliere Tyndal & Co.—London.
E. R. Morton—Lancet London—1907—1—1491.
Sloan, S.—Lancet, London—1907—1—1557.
Strebel, H.—Deutsche and Med. Wochenschrift—1904—63.
Strebel, H.—Munchener Med. Wochenschrift No. 2—1908.
Rosenkrantz, E.—Berliner Klin. Wochenschrift No. 20—1908—957.
Czerny—Munchener Med. Wochenschrift No. 6—1908—265.
Czerny—Archiv. fur Chirugie—Vol. 86—No. 3.
Nagelschmidt, D.—Med. Wochenschrift—No. 10—412—1908.
Bentiser and Krumm—Wochenschrift No. 10—408—1908.
Strebel, H.—De Med. Wochenschrift No. 14—P. 598—1908.
Ehrman—De Anwedung der Electricitat in der dermatolgie-Verlag von Josep Safar.
Winkler—Monatschrift fur dermatologie Bd. 45—1907.
Strong—High Frequency Currents—Rebman & Co.
Lebon, H.—Treatment des Epitheliomas Cutanes par les methodes nouvelles—F. R. de Rudeval.
Berthomier, Andre—Les Courants de Haute Frequence dau le dematoses Diathetignes—These de Paris—1906.
Eulenberg—Urber Anwendung f. hochgespamiter Strom von hoher wechselzahl Munchen Med. Wochenschrift—1906—S. 242.
Pozzi—Bulletin de 'Academie de Med.—July 30, 1907.
Keating Hart—Annals de electrobiologie et de Radiologie—Feb., 1907.
Revue de Theraputique No. 20—Oct. 8, 1907.
La Sideration Electrique dans le traitment lu cancer, Revue de Theraputique Med. Chir.—Oct., 1907.
Bordier—Traitment des epitheliomes cutanes par le etincelles de haute frequence Arch d'e'lectr. Med.—XII.
Menard—Epitheliome cut. traite' pur le haute—Revue de Theraputique I—VI.
Strebel, H.—Deutsche Zeitschift fur Chirugie Bd. 72 S. —387—1904.

SUICIDE AND ALCOHOL.*

By A. W. HOISHOLT, M. D., Stockton.

Self-destruction is an act which was not infrequently resorted to by the ancients, some of whom looked upon it as a virtue just as the Japanese of our day consider harakiri a perfectly justifiable act under certain circumstances. With the advance of the Christian religion there was a decided diminution in the frequency of suicide, and it is claimed that from the 5th to the 12th century it almost wholly disappeared, due probably to the teachings by the church of the life hereafter of the suicide and the rigid rules of the church concerning the disposal of his body in unconsecrated ground. As the church began to lose its influence upon the masses at the time of the Reformation there was a revival of suicide until it has become an act of very frequent occurrence.

During the last century suicide has appeared to be on the increase wherever carefully gathered statistics have been obtainable. This has been the case in almost every state in the union, and that although attempt at suicide is punishable in many of them. At the same time one is not able to say that this rapid increase is to any great extent caused by industrial, political or religious disturbances. The material comforts have been increased more and more, laws have been passed favoring the workingman, and more philanthropic work is being done to-day than formerly. Religious questions of dissention are losing their influence upon the minds of to-day as compared with conditions in existence a century ago, and still it has been ascertained that the increase of suicides has been more rapid in Europe and America than the geometrical augmentation of the population and the general mortality. In Russia the population increased from 1860 to 1886 about 8%, but suicides increased 76%. On the other hand brainwork has reached a greater intensity than ever before. The seeking after wealth and satisfaction of sensual appetites are being spurred on. A man with a $100.00 monthly income is trying to rival in enjoyments of life the man with a $200.00 monthly salary and so on. At the same time moral precepts are losing their control and disappointment and misery are therefore the more felt. Education, a boon to humanity from an aesthetic point of view, is being steadily more thoroughly disseminated, inducing people to abandon the old advice of "cobbler, stick to your last" for the modern expansion ideas, inducing them to leave manual industries and agriculture, sending them away from their old associations to new surroundings, where the weaklings become dissatisfied, overburdened and predisposed to mental disease and suicide.

It is especially during the last quarter of a century that statisticians have shown an alarming increase of self-destruction. The suicide-ratio has, however, varied in different countries. In 1877 Saxony, which country was at that time first on the list, showed an average of 39.1 suicides per 100,000 inhabitants, while in 1836-1840 there were only 15.8. In 1880 there were reported to be three times as many suicides in San Francisco as in New York and 4½ times as many as in Philadelphia. In 1890 the ratio in San Francisco was 23.7, in 1900 it was 49.9 and in 1904 it was 72.6 per 100,000 inhabitants.

The question as to the mental health of a suicide has been frequently discussed pro and con. Some writers have even doubted that suicide is ever committed by a person of sound mind. Esquirol and Bourdin looked upon almost every attempt at suicide as a proof of a dangerous mental disturbance and as a sufficient reason for care in an insane asylum. This is the law to-day in Bavaria, where the authorities send every case of attempted suicide to a hospital for insane. Griesinger, the father of psychiatry, considered mental disease the chief but not the exclusive cause of suicide. A number of years ago Kraepelin said that he had found pronounced mental symptoms present in only 30% of the cases of attempted suicide that had come under his observation clinically, while Heller of Kiel, Holstein, found marked pathological changes affecting responsibility in about 43% of 300 autopsies on suicides of all classes, it being required by law in

* Read at the meeting of the San Joaquin Valley Health Officers' Association held at Fresno, October 13, 1908.

that province of Germany, that the body of every suicide must be subjected to a post-mortem examination at the pathological-anatomical institute at Kiel. In a recently published treatise on suicide Prof. Gaupp, late of Munich, reports that he found as a result of most careful investigation that only one case out of 124 cases of suicide was mentally well, as absolutely so as one was able to ascertain; 44 were insane—mostly manio-depressive insanity, dementia praecox or imbecility—the rest, not pronouncedly insane, were principally chronic alcoholists and psychopathic individuals. Gaupp's report deals with too small a number to justify definite conclusions, but his ratio of 44 pronouncedly insane persons among 124 cases is but a slight increase over what the majority of writers had formerly reported, namely: that insanity is found present in about 1-3 of the male and 1-4 of the female suicides. It might further go to show that if there has been a great increase in the number of suicides, this increase must be due to influences other than insanity, it being furthermore questionable, according to some recent writers, whether "the sum total of insanity in the community, both in and out of hospitals, is progressively increasing." In Scotland, the only country where statistics even approaching completeness are available, for instance, there has been no increase of insanity during the last three years—and a similar report comes from England and Wales.*

Alcohol plays a considerable role among the contributing causes of suicide—sometimes it is used by a person who does not drink to excess, as a bracer for the execution of the suicidal act, but more frequently it causes the inebriate to lose his energy and will-power so that he finds no other way to deliver himself from the chaos for which he is himself to blame than by taking his own life. Many writers consider alcohol the chief cause of suicide, and the majority think it is at least second or third in importance. A long continued excess in liquor leads to increased misery, domestic quarrels, dislike for work, diminished capability for work, abnormal irritability of mood with disposition to melancholy depression, to ideas of jealousy and persecution—finally mental and moral qualities as well as the physical health suffer.

Ponomarew and Hubner found 114 alcoholics among 298 suicides in St. Petersburg, 112 cases of insanity and 21 cases of incurable disease. Among the colored people in the Southern States suicide as well as insanity has increased every year with the increased consumption of liquor among them. In departments in France where the most alcoholic drinks are used there has been a correspondingly high record of suicide, insanity and crime. In 36 departments there were in 1897, 2540 cases of alcoholic insanity, while in 1907 the number was 3988, an increase of 57%.

With the view of ascertaining the prevalence of suicidal attempts among the manifestations of mental derangement leading to commitment of alcoholists on the one hand and all other forms of insanity on the other, I have carefully compiled the records of 734 patients, whom I have had under personal observation in my department of the State Hospital at Stockton during the five years beginning with July 1st, 1903, and ending with June 30th, 1908. The results of this investigation are shown in the following table:

	Patients received	Number of alcoholic suicides	No. of alcoholists	Att. Suicides among all other forms of insanity	No. of patients suffering from insanity other than alcoholism
July 1, '03-June 30, '04	121	5	17	11	104
July 1, '04-June 30, '05	154	4	22	9	132
July 1, '05-June 30, '06	141	12	33	10	108
July 1, '06-June 30, '07	154	6	36	11	118
July 1, '07-June 30, '08	164	7	30	25	134
Total No. for 5 yrs.	734	34	138	66	596

34 att. suicides among 138 alcoholists.....24.63%
66 att. suicides among 596 of all other forms of insanity 11.07%

According to this table it would appear that there has been a marked increase in the number of alcoholists received in proportion to the total number of commitments during the four of the five years and that the number of the alcoholic suicidal attempts prior to admission has varied but slightly during the five years with the exception of the year ending June 30th, '06, when the number of unsuccessful alcoholic suicides was twice the usual average. Of these 12 unsuccessful suicides 8 of them occurred during the 2½ months immediately following the earthquake. During the five years 34 unsuccessful suicidal attempts have occurred prior to admission among 138 sufferers from some form of alcoholic insanity or in 24.63% of the cases while only 66 out of 596 patients presenting symptoms of other forms of psychosis have attempted suicide prior to their arrival in the institution, i. e. in 11.07% of the cases. In other words unsuccessful suicidal attempts are more than twice as frequent in alcoholic insanity as in all other forms of insanity combined, and one out of every four sufferers from alcoholic insanity makes attempts at self-destruction. The table also appears to show that about 100 suicidal attempts occur among 734 patients admitted, or in other words that one patient out of about every seven makes an unsuccessful attempt at suicide prior to admission to the asylum.

With regard to the number of cases of alcoholic insanity among the total admissions to the Stockton institution my figures show that there were 138 among the 734 cases, which is 18.8%, about 3% higher than my estimate two years ago.

The alcoholist is driven to commit suicide under different circumstances depending upon a varied state of affects:

1. He may be led to take his own life when the alcoholism has assumed a melancholy form—when he is in an extreme state of mental depression.

2. He may be subject to vivid hallucinations

* "Some Origins in Psychiatry" by Clarence B. Farrar, Am. Jour. of Insanity, January, 1908, p. 526.

which are pronouncedly persecutory in nature: a mob outside the room clamoring for his blood, when he hears calls of "hang him," "shoot him," etc.—or he sees devils or other horrid spectacles which fill him with terror, to escape all of which he prefers death.

3. The individual who because of misfortune in life was depressed when he began to drink to excess, may be so overwhelmed with an absurd exaggeration of his troubles or difficulties during the intoxication that the sudden suicidal impulse is carried into effect because of the absence of calm deliberation;—and 4. After he has recovered from the mental effects of one of his debauches, a despair of ever being able to control himself seizes the alcoholic, when he realizes the social and financial ruin which stares him in the face. The despair is associated with an enfeeblement of the will-power and frequently with a marked irritability, which accounts for the trivial motives of some of these suicides. One alcoholist kills himself because he has a slight dispute with his wife, another because his friend will not lend him a few cents or dollars to spend in some saloon, a third because the barkeeper refuses to give him another drink, etc. In leading to this enfeeblement of will-power alcoholism may also bring out symptoms of nervous weakness or hysteria when disposition to this disturbance is present in the individual. This is especially illustrated by the efforts at display and the sham attempts at suicide frequently met with among alcoholists. They lack the courage to undertake the self-destruction in a way to insure success. The cut they make in the throat or on the wrists is often not much more than a scratch and the attempt at drowning is either made in shallow water, or they no sooner reach the water than they shout for help with all the vigor at their command. Sullivan's statistics illustrate this feeble-hearted character of the suicidal attempts of alcoholists. He found 77.5% of alcoholists among a certain number who failed to commit suicide, but only 12% of alcoholists among those who succeeded.

The problem of reducing the frequency of suicide among alcoholists resolves itself into efforts in the direction of doing away with the excessive use of liquor and reclamation of those who have succumbed to its influence. From the standpoint of general prophylaxis, all efforts at alleviating misery and poverty and improving the physique during childhood and youth will tend to accomplish this. A more careful instruction of the child in moral ethics, which is much neglected in many quarters; the work done by Young Men's Christian Associations, especially their work of popularizing the practice of physical culture among adults as well as children, tending to bring the physical health to the highest possible standard, would lead to abstinence from alcoholic excesses and in a general way tend to the lowering of the suicide rate. The correction of a certain other deleterious influence would likewise have a prophylactic effect. That is a change of policy on the part of the daily press with regard to the publication in detail of news of a certain class. Just as man puts more food into his stomach than is necessary to sustain life, so does the press feed the public with a superabundance of mental pabulum (?) in the form of news in detail. On a great many the administration of some forms of this mental food, such as reports of crimes, domestic unhappiness and suicides, has a very injurious effect. It tends to produce nervousness and at times may result in imitations or auto-suggestive acts; especially is this the case with regard to reports of suicides when read by the nervous and degenerated or by the alcoholic weakling. On the subject of this influence of suggestion I am reminded of the experience of Sir Charles Bell, the noted surgeon to the Middlesex Hospital in London (1764-1824), who while he was being shaved told his barber about having just sewed up the wound of a man who had made an unsuccessful attempt at suicide, and Bell gave the anatomical reasons for his failure. After a little the barber excused himself, went into an adjoining room where he was afterwards found with his throat cut in an anatomically correct manner. The antidote to the poisonous influence of the press in this direction is "silence." A much curtailed report of suicides and crimes would therefore be a charitable as well as a prophylactic act on the part of the newspapers. Now as to the possibility of the prevention of the evil itself.

Esquirol said that suicide was a disease. To a certain extent this is true, and as self-destruction and disturbances of the peace by alcoholics, whose next move may be a suicidal attempt, are overt acts which come under the eye of the authorities, the question presents itself: What interest do the authorities in our State take in the treatment of the alcoholics? They let the alcoholist—in the absence of symptoms of alcoholic insanity—suffer the penalty for his crimes. In the case of a disturbance of the peace or an extreme state of intoxication he is sent to jail—thrown in numbers of six to a dozen or more into a dark cell where there is just room enough to lie on the floor in more or less filthy surroundings for thirty to ninety or more days. After this he is again turned loose on himself—and the community, soon lapsing into the life he led prior to his arrest, under which circumstances an improvement is out of the question, the steady drinking rendering him unstable and robbing him of all energy. Aside from the fact that the above treatment of the alcoholist is only custodial and that in a cruel form, it often leads to grave mistakes, when cases of serious brain-troubles are marched into jails under the guise of alcoholic intoxication—all of which could be prevented by adequate medical attention and proper provision for the caretaking of doubtful cases. Such mistakes and inhumane treatment have occurred from time to time in our jails. The sessions of police courts give almost daily accounts of offenders, arrested for the third, fourth, sixth time or more. In the Stockton as well as in other institutions numerous instances are met with where alcoholists have been recommitted several times and in some cases unsuccessful attempts at suicide have even repeated themselves in the same individual with each

recurring attack of delirium tremens or other form of alcoholism. An instance of a patient committed to the asylum seven times—each recommitment because of a new outbreak of delirium tremens or subacute alcholism has occurred at the Stockton hospital—entailing an expense to the State, alone for the legal proceedings, of at least $300.00. Would a sojourn at a home for inebriates where an attempt at reclamation could have been more successfully carried out, not have been a better investment?

The only chance the alcoholist has of getting rid of the bane of his existence is to be so cared for that he has not only no opportunity to get liquor for a protracted period but that he is given surroundings which stimulate him to exercise his powers of resistance when facing the temptation to drink. These surroundings are not obtainable at hospitals for the insane, to which most of these cases are sent in this State. Not only do the cases not receive the proper surroundings but, as they are frequently sent away again in a month or even in less time, their detention in insane asylums can have no more curative effect than their confinement in jails. If the State is to do its duty to these unfortunates humanely and correctly it will have to make a reform in the mode of disposal of the chronic drunkard, which is not possible until it has established a State Home or Sanitarium for inebriates.

PRIMARY PNEUMOCOCCUS PERITONITIS.

WITH REPORT OF A CASE.

By LEWIS SAYRE MACE, M. D., San Francisco.

The rather unusual occurrence of the invasion of the peritoneum by the pneumococcus has received more or less attention since the publication by Bozzolo,[1] in 1885, of a report of a case in which a pneumococcus infection of the peritoneum was a complication.

Within a few years Cornil, Savestre and others reported isolated cases, and in 1890 Nelaton performed the first operation for the relief of this condition, but without success.

In 1903 Von Brunn [2] collected fifty-seven cases of pneumococcus peritonitis in children and fifteen in adults.

In 1906 Annand and Bowen,[3] of London, in a complete and scholarly paper reviewed the subject up to that time and reported a series of fifteen cases seen by them personally, only four of these, however, being primary infections.

Pneumococcus peritonitis is divided into the primary and secondary forms, and each of these is again divided upon a pathological basis into local and diffuse types. The secondary form is merely a blood- or lymph-borne infection from a more or less distant focus. Pneumonia of the lungs is the most common source, the next being infection of the middle ear, and less frequently infection of the appendix or of the uterus and its adnexa. This secondary form offers but few problems of diagnosis. The development of a peritonitis in an individual already suffering from a pneumococcus infection indicates at once the nature of the trouble.

Very different, however, is the occurrence of a pneumococcus peritonitis as a primary infection in a person apparently well and strong, especially if it be a diffuse inflammation from the start. A sudden agonizing pain in the abdomen, accompanied by rapid and feeble pulse, marked cyanosis, fever, prostration and rapidly developing signs of a general peritonitis and a profound toxemia, resembles nothing so much as a perforated gastric ulcer, and for this or some similar accident it is usually mistaken. Of forty cases recorded by Annand and Bowen but five recovered—a mortality of 88 per cent. It is hard to understand why this disease should be credited in the few text-books that notice it at all with having a good prognosis. It must be that the diffuse form has been confused with the milder local type of inflammation. Here the onset is slower and treatment more efficacious, the figures being just reversed—over 81 per cent of the local infections recover.

As to the portal of entry of the infection in primary peritonitis it is evident that we have to deal usually, if not always, with infection directly through the mucous membrane of the intestines.

Calmett,[4] in France, and Shroder and Cotton [5] and others in America, have shown that it is a very frequent occurrence for the tubercle bacillus and pneumococcus to pass through the walls of the intestine without either losing their virulence or causing a lesion at the site of migration. Flexner has shown that the pneumococcus is frequently present in the intestine, especially during conditions of subacidity and it is interesting to note that in many reported cases of primary pneumococcus peritonitis the attack has been preceded by gastric symptoms and in not a few by the signs of acute enteritis.

Case. The patient was a male, forty-two years old, a teamster by occupation, of excellent family history and personal habits. In infancy he was said to have had an abscess of the lung when six months old. Never consulted a doctor until a year ago, when he was troubled with some pain before and after eating and belching of gas.

For the past three months he had had some indigestion and had lost some weight. On the day before his death at 5 p. m., while at work, he was seized with a severe pain in the abdomen and vomiting. He became worse during the night and was brought to San Francisco in the morning, when he was found to be suffering from general peritonitis and profound toxemia. On account of the preceding gastric symptoms a perforation of some portion of the gastro-intestinal tract was suspected and he was sent to the hospital for operation. At this time he was failing rapidly and died before operation, about twenty-six hours after the attack began.

Autopsy by Professor Ophuls showed that the abdomen contained a large amount of thin pus with flakes of fibrin. The abdominal viscera were carefully examined for a lesion to account for the infection, but without result. The gallbladder and appendix were normal. No perforation or abnormality of the gastric walls was found. The lungs showed edema and hemorrhage, and an old obliterating pleurisy of the left pleura. The smear and culture of the pus from the abdominal cavity showed pneumococci.

Since June, 1906, when the article of Annand and Bowen was published, I have been able to find reports of four cases of primary diffuse pneumococcus peritonitis by Ellis,[6] Garrod and Stewart,[7] and A. Cuff.[8] Of these five cases, including the one here presented, two recovered.

A case recently reported by Lyman[9] is very interesting, in that it appears to be a simultaneous infection by the pneumococcus of the lungs and peritoneum. The question at once arises if it is not probable that the peritonitis, being a diffuse inflammation, was not actually the primary infection, the invasion of the lungs being secondary to a general septicemia.

Conclusions. Primary pneumococcus peritonitis is a clinical entity which has received must less attention than its serious nature warrants. Its mortality is high. Contrary reports are probably due to confusion of the true primary infection with the secondary local types. The mode of invasion is probably always through the intestinal wall and these primary cases are therefore usually diffuse inflammations.

REFERENCES.

1. Da Bozzolo. Centralblatt. fur Klinische Medicine, 1885.
2. Von Brunn. Beitrage zur Klinische Chirurgie, Vol. 29, 1903.
3. Annand and Bowen. Lancet, London, June 9, 1906, p. 1591.
4. Calmette and Guerin. An'l' Inst. Pasteur. XX No. 8.
5. Shroder and Cotton. U. S. Dept. of Agriculture, Bureau of Animal Industry, Bulletin No. 49.
6. Ellis. British Medical Journal, Nov. 3, 1906.
7. Garrod and Stewart. Lancet, Aug. 4, 1906.
8. Cuff. British Medical Journal, April 18, 1908.
9. Lyman. Denver Medical Times, Jan. 1908.

THE EARLY RECOGNITION OF PULMONARY TUBERCULOSIS.*

By GEORGE H. EVANS, M. D., San Francisco.

Were it not for the pathetic illustrations of failures to recognize tuberculosis in its curable stage that are daily brought to the attention of the phthisio-therapist, a paper with this title would scarcely be considered of practical importance beyond the confines of the undergraduate class-room. The disastrous results of these failures are given startling emphasis when the statistics of tuberculosis sanatoria are studied, and the percentage of apparent cures of first stage cases are compared with those where the disease is more advanced. Allowing for the inaccuracies in the interpretation of such figures, taking fully into consideration the bias of the tuberculosis enthusiast, the fact still remains that a large proportion of early cases of tuberculosis will get well with careful medical care, anywhere, and in any climate; while a great percentage of those not placed under proper care sufficiently early, will die, in spite of the best treatment that can be bestowed upon them. If this is true, and we must all admit that it is, then the responsibility that the medical man must bear toward the tuberculous, is very evident.

It is in all probability true that the vast majority of the human race living in populous communities, have at some period of their lives, a tuberculous infection. The truth of this statement is abundantly demonstrated in the autopsy rooms of large hospitals, and is generally admitted. With this great prevalence then, and with the knowledge of the curability of tuberculosis in its early stages, we must agree that the general practitioner should be able to recognize this disease sufficiently early, or be conversant with those symptoms and physical signs which are sufficiently suggestive to impel more intricate examination.

I shall, therefore, in this paper, avoid as much as possible, the consideration of complicated diagnostic measures, and shall refer only to those which are within the reach of every practitioner.

Modern laboratory methods have been responsible, to a very great degree, for the fact that incipient tuberculosis is so frequently overlooked. They have been responsible in a two-fold way. First, the evolution of the modern laboratory has been disastrous to clinical acumen, and medical schools are turning out men insufficiently trained in bedside clinical methods. I do not mean to inordinately belittle the aid given to diagnosis through the laboratory, but I do mean that the average clinician relies too implicitely on the report emanating from the laboratory, and altogether too little on what he sees and feels and hears, or what he should see and feel and hear. Second, we too frequently await a laboratory diagnosis of tuberculosis forgetting or ignoring the fact that it is capable of being recognized in the closed form, before the caseification and breaking down of a tubercle situated near a bronchus or bronchiolus, reveals tubercle bacilli in the sputum, indicating, too often, that the disease has advanced beyond the curable stage.

That such large numbers of the profession rely so implicitly on the microscopic diagnosis of the disease, is scarcely to be wondered at, when we search the modern American literature on the subject and realize how very scanty are the contributions devoted to early diagnosis. Again, one does not have to look back farther than 1888 to see the statement of von Ziemssen, that, "it may rank as one of the best established rules of diagnosis that * * * tuberculosis may be excluded in any case of lung affection, in which repeated skilled examination has failed to demonstrate tubercle bacilli." If this disease must be recognized earlier than it is possible to recognize it with the microscope, in order to diagnose it in the curable stage, what are the implements at our hands? What symptoms and what physical signs must present themselves in order to tell us accurately that tuberculosis exists in this so-called pre-bacillary stage?

The symptoms of early tuberculosis seldom present anything typical. It was well pointed out by Flick at the Washington Congress, that it is primarily a lymphatic process, and as such it can be diagnosed by reaction and enlargement. I shall refer to diagnostic reaction later.

Disturbances of circulation and blood formation are of great importance. These patients are fre-

* Read before the Contra Costa Medical Society November 15, 1908.

quently pale, and tachycardia on the slightest bodily or mental exertion, denoting an irritable weakness of heart and vasomotor system, is very suggestive. This condition, frequently due to tuberculin toxemia, is also responsible for many of the digestive disorders seen in the early stage, and for the gradual loss of weight so frequently noticed. Another cause of tachycardia usually overlooked, is the implication of the vagus in masses of bronchial glands.

Of blood changes, chlorosis is frequent, and the association of chlorosis with a decidedly lowered blood-pressure, has been particularly emphasized by Papillon.

The temperature curve gives us information of the highest value, when carefully interpreted. To accomplish this, the patient must be provided with a thermometer, and instructed to take the temperature every two hours throughout the day, keeping the thermometer in the mouth for five minutes, avoiding the taking of food or drink for at least one-half hour previous. The frequency with which a sub-normal morning temperature with a slight afternoon rise is noted, is significant. The influence of exercise on the temperature is also important. This is observable, to some extent, in healthy individuals, but the significant feature with the tuberculous subject, is that the return of the temperature to normal, after it has been increased by exercise, is much retarded. This is probably due to the fact that the individual has received an auto-inoculation of his own tuberculin. The truth of this theory has been practically demonstrated by Paterson and Inman, in England, who by carefully graduated exercises, have been able to control the opsonic index of patients under their care at Frimley, and are immunizing them by auto-inoculations of tuberculin. The value of the temperature record, however, as an early symptom, depends entirely on the thoroughness with which it is carried out, and the care with which the results are interpreted.

In women, a slight premenstrual pyrexia, not frequently mentioned in the literature, is a very important symptom.

A consideration of the nervous symptoms of the incipient tuberculous, could very well occupy our attention throughout the entire paper. I shall endeavor to present a few of what I consider the most important. I believe that a large number of patients, where a diagnosis of neurasthenia has been made, have a tuberculous infection, which, too, often remains unrecognized until the disease is advanced. The results of the toxemia produce a group of symptoms, particularly vaso-motor, which are apt to be interpreted as psychic. They become irritable or melancholic. Headache and sleeplessness are common. There are frequent evidences of disturbance of peripheral circulation. Sweating, especially of the axillæ, is noticed, which latter is a matter of daily observation in the examination of tuberculous subjects. Not by any means the least important nervous symptom is a peculiarity of temperament, difficult to describe, and yet which I think must impress itself upon all those who see large numbers of tuberculous subjects. The patient, often with a terrific history of decimation from this malady among the immediate members of his family, will forget, until closely questioned, the cause of death. The synonyms for tuberculosis resorted to are many; such as bronchial trouble, chronic bronchitis, stomach cough, general debility, etc., and when forced to admit that certain ones died of tuberculosis, the explanation is eagerly asserted that the disease was the "direct result of a specific exposure," that the victim had "always been healthy," etc. The significance of the symptoms often reluctantly obtained from the patient, is frequently miminized by this type. I have many times had patients at first admit having coughed but a few weeks, and only after careful questioning, been able to extract the fact that the cough had existed for a year or more. These coughs, in the mind of the patient, emanate from the stomach, the liver, and other viscera, and very frequently "catarrh" is ascribed as the causative factor. These patients do not necessarily deliberately intend to deceive. It is, in my opinion, temperamental in a certain type of tuberculous individual.

Pain is not a frequent symptom in early tuberculosis, but when present, the cause should be carefully sought. Too often a diagnosis of "muscular rheumatism" or of "intercostal neuralgia" is made, and a plaster, or even worse, some filthy sticky substance with a long trade name, is applied, when a conscientious examination would reveal a pleural adhesion, the result of a tuberculous lesion, which may have even then existed some time.

Hemoptysis, in the absence of other causes, is a very important factor in the symptomatology of tuberculosis. It may be present a long time before physical signs supervene, and the significance of this symptom should never be overlooked.

It is to the physical signs, however, that we must look for conclusive evidence of the existence of incipient tuberculosis, and here, inspection frequently gives us information of a very important nature. The patient should be placed in the sitting posture, with the body stripped to the waist, in a position in which a good light will fall upon his chest. The symmetry of the chest, the amount of depression of the clavicular fossæ, if any, should be carefully noted; the position of the apex beat of the heart, and any other visible cardiac pulsations should be observed. A deep inspiration will now frequently elicit one of the most valuable signs of early tuberculosis, viz., a lagging of the affected side, which is more easily obtainable if the palms of the examiner's hands are gently applied to both sides of the chest. Indeed, lagging of the affected side, with afternoon temperature, is one of the earliest evidences of tuberculosis that we possess. Diminution of the excursion of the affected lung, while of value, is not, in my opinion, of as great importance as lagging, for it frequently denotes a more advanced lesion.

On palpation, we have no particularly valuable

distinctive signs of early tuberculosis. Increased tactile fremitus, usually denotes a more advanced condition. Palpation gives us information, however, as to the existence of enlarged glands, and should be employed as a routine measure.

Percussion is of great value, but marked dullness is not an early sign. What should rather be looked for, is a change in the quality of the normal note, which change is felt by the finger, rather than heard, due, undoubtedly, to the fact that the elasticity of the lung tissue is injured by the pathological changes taking place in the lung. Sometimes the percussion note is of a slightly tympanitic quality, which symptom has been emphasized by teachers in the Viennese school, and is a matter of common observation by the writer. Percussion is of peculiar value, in marking out changes in the area of cardiac dulness. Especially is this so in the left lung lesions, where the contracted lung, which contraction frequently takes place very early, produces a relative increase in the heart dulness to the left, which, when compared with the position of the apex beat, is most striking.

It is probably from auscultation that the most reliable evidences of early tuberculosis are obtained. The form of stethoscope to be used must be largely a matter of individual preference, my own choice being that of a simple bell binaural instrument, uncomplicated, therefore transmitting the least number of extraneous sounds. For practicing "stroke auscultation," the Bowles form of instrument is undoubtedly the best. The uni-aural wooden stethoscope, so popular in Great Britain, certainly possesses some advantages over the binaural forms, in its freedom from all extraneous sounds. Whatever instrument the examiner elects to use, he should endeavor to perfect his technic to as great a degree as possible, and to this end he should adopt a systematic routine procedure in auscultating a chest. From top to bottom the entire lung must be examined, comparing the findings in corresponding intercostal spaces, remembering the importance of the lung margins in commencing tuberculosis. In examining the back, the body should be slightly bent forward, the arms crossed upon the chest, and the hands brought over the opposite shoulders in order to increase to the greatest extent the interscapular areas.

Probably the first change from the normal breath sound is rough breathing, which must not be confused with the harsh respiratory murmur, so often a sign of increased function. This rough breathing is inspiratory in time, and has been specially mentioned by Turban and Sahli. Various explanations have been presented as to the causation of this phenomenon, the most probable being a swelling of the finer air passages, and the presence of small airless nodules scattered throughout the air-containing tissue. Whatever the explanation, its presence is probably the earliest auscultatory sign which we possess.

Frequently accompanying roughened breathing, or at a slightly later stage, cog-wheel breathing is present, not as a rule found at the apices where we usually find the early lesion, but extending from the edge of the affected portion downwards. It is due to an interference with the entrance of air into the cells and is a sign of a catarrhal condition.

Associated with these phenomena is a weakening of the respiratory note, due to the fact that the air does not enter a portion of the affected apex or area. Thickening of the pleura, or fixation of a portion of lung by pleural adhesions, will also cause it.

Prolonged expiration is not necessarily a sign of early tuberculosis, although it has long and popularly been considered so.

Harsh vesicular breathing, mentioned above as often the sign of increased function in a lung, does occur in an early tuberculous lesion, but is more frequently a later sign. It occurs more often when contraction and the development of connective tissue have occurred and is frequently permanent in healed processes. I have a number of patients whom I believe are completely cured, and who have remained well for some years, where the only evidence of their former trouble is the harsh vesicular breathing heard over the part where the tuberculous lesion had existed.

The presence of rales is not necessary in order to establish the diagnosis of incipient tuberculosis, and when present as a very early symptom they are usually due to small atelectatic areas occurring in the neighborhood of nodules, in apices where the breathing is already weak. These rales, which are crepitant, are frequently overlooked by the examiner, and often are only elicited at the end of a deep inspiration following a cough. This plan should be adopted invariably in examining a patient for rales. I have frequently been able to find them by causing the patient to lie upon the opposite side from the one suspected, thereby compressing the well lung, and forcing the other to greater activity.

I would particularly urge deliberation in the examination of a patient for incipient tuberculosis. Do not be satisfied with one examination. Examine your patient under different conditions, as to time, rest and exercise.

Carefully chart the results of your examinations, and studiously compare them. It is only by such painstaking methods that we can expect to do our duty toward this large class of patients.

In spite of the most thorough examinations, notwithstanding the most careful interpretation of symptoms, a considerable proportion of these patients leave us in doubt as to the diagnosis. It is in this class that we have in the diagnostic use of tuberculin a most important adjunct.

Time does not permit of a résumé of the development of this method, much less of a discussion of the technic, or a consideration of those forces concerned in the intricate mechanism of immunity on which these reactions depend. With the value of inoculations of Koch's old tuberculin as a diagnostic measure firmly established, there have been introduced during the last year and a half, several modifications of the subcutaneous method. The

more important of these, the conjunctival test to which attention was first called by Wolff-Eisner in the spring of 1907, and later, in June, by Calmette, and the cutaneous test announced by von Pirquet, also in the spring of 1907, are at present engaging the earnest attention of tuberculosis specialists throughout the civilized world. The value of these tests has been pretty thoroughly established, as was evidenced by the interest which they produced at the recent Congress in Washington. Their limitations, and possible harmfulness in certain cases are still under discussion. While they must be used with care, and the results interpreted with caution, it must be conceded that the reaction is a specific one, and that we have in tuberculin a valuable aid in the diagnosis of pulmonary tuberculosis.

BIBLIOGRAPHY.

1. von Ziemssen.—"Zur Diagnostik der Tuberculose." Liepzig—1888.
2. Flick.—"Diagnosis and Treatment of Early Cases of Tuberculosis." (International Tuberculosis Congress, Washington, 1908.)
3. Papillon.—"Diagnostic precoce de la tuberculose pulmonaire, en particulier chez les chlorotiques," These de Paris, 1897.
4. Turban.—"Tuberculosis of the Lung."
5. Sahli.—"Klinische Untersuchungo Methoden."
6. Calmette.—"Presse Medicale," June 19, 1907.
7. von Pirquet.—"Berl. klin. Wochenschr." 1907. Nos. 22-23.

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Powell, David, Marysville, Cal.; Parker, A. S., Riverside; Pinneger, S. D., Lovelock, Nev.; Powers, G. H., San Francisco; Pache, F. C., Mina, Nev.; Paine, D. A., Eugene, Or.; Powell, C. S., Benson, Ariz.; Peers, R. A., Colfax, Cal.

Reardan, T. B., Oroville, Cal.; Ross, J. L., Redwood City; Rowlands, F. F., Pasadena; Rattan, Frank, Martinez, Cal.; Rogers, S. C., Watsonville; Reed, J. D., Covina.

Stansbury, O., Chico; Spencer, W. O., Huntington, Or.; Schloss, A., San Francisco; Shaw, E. E., Walla Walla, Wash.; Smith, T. Hardy, Pomona, Cal.; Samuels, W. L., Winnemucca, Nev.; Swope, S. D., Deming, N. M.; Southard, W. F., San Francisco, Cal.

Thompson, C. E., Dunsmuir, Cal.; Tiffany, E. N., Coalinga; Terry, W. I., San Francisco; Teubner, C., Saticoy; Thompson, J. G., Oakdale; Tebbetts, J. H., Hollister; Taylor, A. W., Santa Barbara; Taylor, A. Miles, San Francisco; Thompson, E. E., Sisson.

Van Voorhees, H. T., Tehachapi.

Woodbridge, B., Rocklin, Cal.; Wilson, G. F., Portland, Or.; Wheat, J. E., Fernando, Cal.; White, G. A., Sacramento; Williams, T. M., Palo Alto.

McCleave, T. C., Berkeley, Cal.; McGowan, Granville, Los Angeles; McSwain, T. O., Visalia; Dr. Legge, McCloud, Cal.

Applications.

Hamlin, O. D., Oakland, Cal.; Olmsted, A. C., Wells, Nev.; Iglick, S., Orland, Cal.; Ramey, R. L., El Paso, Texas; Mattison, F. C. E., Pasadena, Cal.; Beattie, J. I., Santa Clara, Cal.; George, W. S., Antioch, Cal.; Beckett, W. W., Los Angeles; Whiting, F. W., Elgin, Or.; Fairchild, E. H., Winters, Cal.; Peek, A. H., Palo Alto, Cal.; Wing, E., Los Angeles, Cal.; Dillon, E. T., Los Angeles, Cal.; Worth, J. H., Albuquerque, N. M., Palmer, H. V., Vacaville, Cal.; Doyle, O. B., Fresno, Cal.; Colbert, J. W., Albuquerque, N. M., Mowery, C. R., Wallace, Idaho; Oakley, H. W., Porterville, Cal.; Seely, A. C., Roseburg, Or.

Recent Appointments—S. P. R. R. Surgeons.

Members.

Dr. E. T. Dillon, Division Surgeon, Los Angeles, vice Dr. H. G. Cates.

Dr. O. D. Hamlin, Division Surgeon, Oakland, vice Dr. Jas. P. Dunn, deceased.

Dr. R. S. Joyce, Division Surgeon, Ogden, vice Dr. G. W. Perkins, deceased.

Dr. S. M. Wendt, Emergency Surgeon, Forest Grove, Oregon, vice Dr. D. W. Ward.

Dr. H. R. Kauffman, District Surgeon, Glendale, Oregon, vice Drs. Sether and Stewart.

Dr. W. C. Smiley, District Surgeon, Beaumont, Calif.

Dr. J. R. Barr, District Surgeon, Springfield, Oregon.

Dr. H. C. Richter, District Surgeon, Calexico, Calif., vice Dr. W. T. Hefferman.

Dr. A. F. Sether, District Surgeon, Roseburg, Oregon, vice Dr. Hoover.

Dr. L. M. Cain, District Surgeon, McKittrick, Calif.

Dr. R. W. Avery, District Surgeon, Oxnard, Calif., vice Dr. G. A. Broughton.

The new Southern Pacific Hospital in San Francisco is rapidly nearing completion. For convenience, arrangement, construction, location and de-

sign it will rival any institution of its kind in the country. The arrangement of plans and ideas as to the systematic working of this large hospital was the work of Dr. F. K. Ainsworth, Chief Surgeon, Southern Pacific Company, and all details have been carried out according to his directions.

The Southern Pacific Company is equipping a car, which, under the direction of the State Board of Health, it proposes to operate over its lines in California for the purpose of teaching sanitation to the general public, more especially the rural public. This car will contain exhibits showing how tuberculosis, typhoid fever, diphtheria, and other common and preventable diseases are transmitted and the best means for their avoidance and eradication. Part of this exhibit has already been collected by Dr. Foster, Secretary of the State Board of Health, and more is in preparation by Prof. W. F. Snow and Prof. Doane of the Leland Stanford Jr. University, and other persons who are interested in public health matters. It is understood that the United States Public Health and Marine Hospital Service will co-operate in this valuable work and that Surgeon-General Wyman will detail one of the officers of that service as demonstrator and lecturer. It is believed that Dr. Colby Rucker, Past Assistant Surgeon, United States Public Health and Marine Hospital Service, who for the past two years has been associated with Dr. Blue as executive officer in sanitary work in San Francisco, will be detailed for this purpose. The Santa Fe Company has also offered to transport this car with demonstrator and attendants over its lines in California, so that all points will be reached.

DIRECT TRANSFUSION OF BLOOD.*

By WALLACE I. TERRY, M. D., San Francisco.

The interest in transfusion of blood has been revived within the past year or two through the improvements that have been made in the technic of vessel suture and through the production of mechanical devices for transfusion. As you know, of course, transfusion is a very old operation and was used in the middle ages even, but the mortality attending it was very high and became so bad it was interdicted by royal command in France at one time. Then it was revived in the 18th century and again in the beginning of the 19th century. But the transfusion was by means of a cannula connecting an artery and a vein, and the cannula itself evidently caused clotting of the blood so that patients died from infection, thromboses and embolisms. Then they attempted to defibrinate the blood and inject that. This was done in the middle part of the 19th century. That fell into disrepute owing to the deaths occuring and especially owing to deaths not from emboli but from hemolysis. Quite a large number of cases were reported where the blood of the patient was entirely hemolysed and the patient died. About 1895 Payr devised a little button made out of magnesium. It was both for transfusion purposes and for the suture of vessels, especially arteries, and that was attended by some success, but did not come into particular favor because of the mechanical difficulties in applying it and only a few cases were reported where it was used. Others worked along the same lines of mechanical devices. Finally the device of Crile was advanced which is practically the Payr tube with an added handle. This is to be used only for temporary purposes and not for vessel suture. Vessel suture was employed before the mechanical devices were improved, especially by Crile, in the transfusion of blood. We owe to Carrel and Guthrie a great deal of credit in perfecting vessel suture by the use of very fine needles and very fine thread and careful approximation of the coats of the vessel, but to suture an artery and vein together is time-consuming. It requires very careful technic, and the mechanical device fulfills the same purposes without the necessity for difficult work.

The indications for direct transfusion are loss of blood from any source—such losses that the body will probably not be able to make up. That includes some of the anemias, for not all anemias are helped by direct transfusion; and in some cases malignant growths—which is a new development just brought out by Crile in the past year. One caution to be observed in transfusion for malignant growths and anemias, is that the blood of the donor and donee should be examined pathologically for evidence of hemolysis. That requires a trained laboratory man, but the technic is being simplified and it will not be long before any good pathologist can make these examinations. But if the donor's blood should destroy the donee's it is a difficult problem, and vice versa. Having settled these factors, which in a way are governed by rather fixed rules, then one can decide about the need and value of the measure itself. It is always to be remembered that the same species must be employed, that the blood of the goat for instance cannot be used for the blood of man. It must be the blood of another human being. Near relatives are the best donors. With regard to the vessels to be selected, the radial artery and one of the medium or small sized veins on the forearm are about the best. The vessels are exposed under local anesthesia, a weak solution of cocain or eucain being sufficient if infiltrated. There is no necessity for general anesthesia. Having selected the vein and the artery, they should be isolated for a distance of a few cm. in order to give play. The patients should be put on tables facing each other, the arm of the one put over the arm of the other and union effected. The Crile tube is ingenious. The vein of the donee is slipped through the inside of the tube and turned over as a cuff on the outside and then is tied. In speaking about the tying there is a little point in the technic which may be worth mentioning. To tie with thread is not always easy because thread will slip. A piece of fine silver wire is better. The vein is run over the last notch on the tube and ligated. Then the end is slipped into the artery and the artery ligated over the vein. In that way you get the two intimas together.

Another point is that care should be taken with the adventitia. The adventitia causes clotting of the blood, so it should be carefully drawn down and cut short. The little tubes should be anointed with a little vaseline. Very often this is applied to the interior of the vessel. Vaseline should especially be used in the suture. It prevents leakage and does

* Verbal report before the Pacific Association of Railway Surgeons, 1908.

not cause clotting. The artery and vein should be clamped by some suitable device such as the Crile clamp which will press the coats together without injuring the vessel. If you use the ordinary clamp you are very apt to break the intima and so cause clotting. These should be covered with rubber in order to bring easy pressure on the vessels. Another thing is that the vessels should be kept moist. The artery retracts materially when free, and it not only retracts but it contracts. A vessel the size of the radial will contract to half its size. If difficulty is noted in getting the passage open it can be expanded by means of a small pair of mosquito hemostats. The vessels should be kept moist with salt solution in order to prevent contraction, especially the artery, and to prevent any clotting of the blood.

Regarding the amount of blood to be transfused, we have no exact means of estimation. Weighing the patients before and after transfusion, or allowing the donor's blood to flow into a receptacle for a definite time are methods of estimating the amount of blood transfused but are by no means exact. The condition of the patients is of more importance. We are able to judge what good has been accomplished by blood counts and blood estimations immediately before and after. Take a hemoglobin down to 20% or 30% with the red cells 1,000,000, and after a transfusion of blood, which does not seriously embarass the donor, the hemoglobin may rise to 35% or 45% and the red blood cells up to 2,000,000 or 3,000,000. If there is no hemolysis that blood will do the patient good, but in a few cases a fatal hemolysis occurs. One case has been reported by Pepper of Philadelphia where hemolysis occurred after transfusion from two individuals, both related to the patient.

The technic of the needle and thread need not be seriously gone into here. It must be learned by the operator by practice on animals or the cadaver. It is somewhat difficult to handle these needles, but it is practice that makes perfect. I have failed in one case of direct transfusion because I took too large a vein in the patient and did not have sense enough to stop and immediately select another vein. When I did realize that the vein was too large it was too late to do anything else and I stopped.

For malignant tumors, that is another phase and something yet to be worked out. For its use in certain conditions, such as extensive loss of blood and in the more chronic conditions of anemia, it seems to me well worth consideration and trial. Such cases should be worked up and the blood estimations should be made in order to have all the valuable data for future reference.

Discussion.

Dr. Adams, Oakland: I have been very much interested in this paper. At the American Medical Association meeting I listened to Crile give his report and experiments and it seemed to me he was very fair in his statements and some of the results which he obtained were astonishing. With patients apparently almost completely exsanguinated and hopeless he claimed that they were quickly restored so that operation could be performed or the patient could be practically restored to the condition of health. I thought the method particularly successful in those cases where the people were almost exsanguinated from hemorrhage and almost dead from the loss of blood. You all know of his experience on the line of sarcoma. He claims to have cured sarcoma in a dog by the use of the blood from a healthy animal. Another class of cases in which he advises this method of treatment, and it seems to be perfectly feasible, is where you have a patient requiring operation with the hemoglobin so low that experience has shown that operation would be unsuccessful. In these cases he believes and maintains that he has restored that patient to such a condition that he has been able to operate and operate with safety. I have great hope for the future of this method.

Dr. Booth: It was my privilege to hear Crile last month. Dr. Terry follows out his technic almost identically. One thing which interested me was the use of transfusion in a case of hemorrhage from typhoid. The patient was in collapse. He selected a cousin as donor and this donor had previously had typhoid, so he had no thought of transferring the fever. He used the transfusion until the donor fainted. The next day he performed a laparotomy on the patient.

Dr. Morton, San Francisco: One thing which strikes me very favorably is that much of our work is a change to what we used to do years ago. A century or two ago we were using transfusion. This has been thought a thing of the past. It has been the same with salt infusion. Here I must claim nearly as much for the infusion of salt as Dr. Crile claims for blood infusion. A year ago at the American Medical Association when he reported there, I remember especially his typhoid case, where there was hemorrhage and he labored a very few minutes and inside of one hour the patient was perfectly conscious, the blood pressure was changed and he had a reversed condition. The donor fainted and his blood pressure had gone down while the other had increased. I have never heard a paper yet read before any medical convention which created the intense interest and enthusiasm that that paper did. I think that there is a great future for this method. In comparing this with the infusion of salt solution we will see that salt solution fills up the volume of blood but we do not get the ingredients which give the nourishment to the cell, consequently if we can be able to introduce the blood direct it will relieve many conditions.

Dr. Brown, San Francisco: There is one thing Dr. Terry said which I think should be borne in mind and that is the question of anemia. If you have ever seen the Crile method pursued in cases of pernicious anemia, you would not want to repeat it. We think, dwelling on this point alone, that it is a wonderful thing which occurs, to relieve anemia through the blood substance, but it is a very serious thing where hemolysis is at the bottom of the anemia. I saw two cases upon whom direct transfusion had been done in the University of Pennsylvania Hospital. One lived about 24 hours and the other five days. They were done by one of the surgeons there under the direction of Dr. Edsol and that was at the time of the early work on the treatment of anemias in this way, and it pretty effectually settled the question that hemolysis was important, and that it was an extremely dangerous thing to do unless the blood of the giver be not an obstructant to the blood of the receiver.

Dr. Terry: I am glad that Dr. Brown spoke of the anemias. It is very important that the cases should be carefully chosen, and that hemolysis should be studied. There is another warning to be sounded and that is the danger of hypertransfusion. It will cause dilatation of the right heart and might cause death. I have seen dogs hypertransfused. The dis-

advantage of salt solution is that it carries nothing with it that is of permanent value to the individual. Put in too much salt solution and it is immediately thrown off through the kidneys, lungs and gastro-intestinal tract. Such a patient can be drowned by salt solution, so an excessive amount of it should not be given in these cases.

TREATMENT OF PNEUMONIA.*

By G. R. CARSON, M. D., San Francisco.

Where do we stand to-day in the treatment of pneumonia?

Have we advanced or are we satisfied with following the teachings handed to us in text-books and with these ideas firmly rooted in our minds do we hesitate to stray from the path thus outlined? How often we have heard the expressions, "Treat the patient rather than the disease, if it is in him to get well he will, if not he will die; if he is an alcoholic he surely will die." "Treat the case symptomatically" and other remarks. Indeed medicine has reached a sad plight if we must throw up our hands and stand by helplessly and patiently trusting to the patient's vitality.

The plan of treatment we now have is rightly called the expectant treatment. We do not know what to expect but we are always expecting something. If the patient recovers his wonderful vitality is given the credit—if he dies, it couldn't be helped.

Pneumonia is an infectious disease, whose chief recognizable lesion is in the lungs but it is no more a lung disease than typhoid fever is a bowel disease. It is a general infection and should be treated as such. After the life period of the micro-organism is terminated the lung yet remains more or less solidified by exudate as is evident from the physical signs continuing.

In both private and hospital practice this disease is more fatal than any other acute disease of adults. It is claimed the mortality is increasing rather than decreasing. However, I believe the time has approached that we must fight this disease more scientifically and forget in a way some of our old teachings.

The same forces that are at work in keeping us healthy are at work in combating disease. Why not make use of them and assist them. True the previous mode of life, habits and environment and complicating disease have much to do with the prognosis in these cases.

To begin with bear in mind that pneumonia is now generally recognized as a general infection and should be treated as such. A thorough understanding of the physiology of the skin and the nervous system is particularly essential. It has been claimed that no definite line of treatment can be outlined as all cases differ more or less. However, I believe certain fundamental principles should be recognized in all cases. I believe the most valuable remedy for pneumonia is the open air treatment, combined with hydrotherapy judiciously adapted to the indications of the case; complete rest of body and mind and good nursing, are also essential in furthering recovery; diet should be restricted to milk and farinaceous broths; stimulants are not to be used as routine. In cases of alcoholic subjects whiskey, 1 oz. to 2 oz. may be given every two or three hours, especially while resolution is going on.

Few medical agents are required,—calomel at onset may be given; if first sound of heart becomes weak or muffled strychnin may be given, 1-30 to 1-10 of a grain every three hours, which is probably superior to digitalis, the action of digitalis being doubtful where temperature exists to any extent; morphin may be used to relieve pain.

A great many treatments have been suggested in pneumonia—

The digitalis treatment.
The Calcium chlorid treatment.
The Quinin treatment,—that is large doses being given at onset.
The open air treatment.
Treatment by hydrotherapy.
Nitrate of silver treatment.
Creosote carbonate treatment.
The vaccination or serum treatment.

With all of these you are more or less familiar so I shall not go into detail.

I observed some twenty-five cases under the nitrate of silver treatment, the majority of which seem to get through the disease easily, ending by lysis instead of crisis. I doubt very much if large doses of quinin are of any great value.

The open air treatment is coming more and more into vogue every day and I believe it is a step in the right direction. Hydrotherapy is but little understood and less used by the greater mass of the general practitioners.

Dr. Baruch states, it is the most valuable remedy we have for pneumonia when applied properly. He further states that it has lessened the mortality over 50%—in fact he has not lost a case in private practice.

The cold friction bath has greatly decreased the mortality in typhoid fever and may be used in pneumonia to great advantage by protecting the organs against the general infection. We all know the effect of the bath in health—it likewise acts in disease, effecting the circulatory, respiratory and nervous systems. After the bath the patient begins to brighten up; inspires more deeply; expectoration is more profuse; cyanosis disappears; fever is controlled; cough diminishes; dyspnea improves; appetite improves; kidneys begin to act more freely; delirium is lessened; quality of pulse improves and sleep is induced. The cold friction bath must be used only in selected cases,—that is cases not complicated with heart disease when temperature is above 103°

The ideal treatment is the use of the wet compress to the chest, as described by Dr. Baruch. The technic of the procedure is important. The wet compress made of old linen cloths, rung out of cold water and applied to chest; the linen is then covered with flannel cloths which overlap about one inch, fastened with safety pins so as to closely fit

* Read before the Pacific Association of Railway Surgeons, 1908.

the chest and keep out air. These ordinarily are changed every hour; the chest should receive one or more dashes of cold water before renewal of each compress. Do not cover the compress with oil silk as it prevents aeration.

The idea is to stimulate and refresh the nervous system by repeated gentle shocks, thereby increasing the functional capacity of the organs and assisting them to resist the toxic agents circulating in the blood; to prevent and control heart failure; reduce the temperature and eliminate toxins. The heart is embarrassed by reason of incompetent peripheral circulation and toxemia. Persistent high temperature may enfeeble the heart and certainly depreciates the nerve centers and interferes with the patient's comfort. Heart failure seems to be the great dread in all pneumonias. How are we going to assist it? Drugs alone are not sufficient to assist a worn out heart — continual doping with strychnin to the heart is like kicking a dying horse when he is down. About 1-3 of the blood is in the peripheral or cutaneous circulation. Some author has spoken of it as the skin-heart which I think is an excellent term and here in the skin we have a vast network of nerve terminals. With these more or less at our command, by properly applied hydrotherapy we are enabled to greatly assist the patient toward recovery. It has been said that the medicine of the future will be largely vaccine and sera, so perhaps we may look for a further remedy here. Already some of our leading physicians have obtained some remarkable results along these lines.

Dr. Boelke reports 13 cases of severe croupous pneumonia treated by pneumonic vaccine in which he claims good results in every case. The dosage was controlled by the opsonic index, the intervals usually being from 24 to 48 hours until the patient showed marked improvement.

To summarize I wish to emphasize these points:

Regard pneumonia as a general infection.

Open air treatment is essential.

Remember that 1-3 of the blood of the body is really in the peripheral circulation, known as the "skin-heart," and that we must bring this skin-heart to the assistance of the heart.

Remember also that we have a vast network of terminal nerves in the skin.

Therefore by properly applied hydrotherapy we can more or less control the circulatory and the nervous systems, which is so essential in pneumonia.

As stated above the idea is to stimulate and refresh the nervous system by repeated gentle shocks, thereby increasing the functionalating capacity of the organs and assisting them to resist the toxic agents circulating in the blood.

The dry flaxseed poultice, and also the "mud" poultice, do not have this stimulating effect—they are heavy and act more by producing a stasis. What we want is to stimulate the circulatory system, forcing the blood on into the veins, thereby relieving the heart's action.

I trust within the next year we may be able to report some good results from the vaccine treatment.

Discussion.

Dr. Evans, Modesto: I feel that it is right and proper for me to say something on this subject for recently I have gone through and recovered from pneumonia. I am sure that I had great benefit from the use of the pneumotoxic serum. I always felt great relief after its use. It did me a great deal of good. Also the inhalation of oxygen for the dyspnea and the use of the digitalis in connection with the strychnin for the pulse, were the three principal things. The strychnia did not give relief but when the digitalis was added to it, it did give relief. The serum did me a great deal of good and I think it is in the right direction for the treatment of pneumonia. There is this to be taken into consideration, a great many cases of pneumonia get well if you do nothing for them and there is no one treatment to be used. I am certain that the use of the serum in my case has given great relief and I think it saves the lives of patients a number of times; digitalis can not be dispensed with.

Dr. Hildreth: It is too bad that this paper is not discussed more fully. Judging from the remarks embodied in the paper and the criticism in discussion, pneumonia has changed since I was familiar with it. I have been in California three years and I have had several cases that were what I call traumatic pneumonia. Acute pneumonia is very different. We also have a form of pneumonia which comes after days of sickness which I think would probably be called pneumonia from stasis, from lying in one position upon the back. I have heard of a great many cases being diagnosed pneumonia in California and I had the curiosity to travel a few miles and make a postmortem upon a case diagnosed as pneumonia, and I found it a case of bubonic plague. I would confess that my experience is confined to regions where malaria is prevalent. I think the quinin treatment is amply sufficient. I think had as high as 72 cases at a time and did not lose a case, using only the quinin treatment. Dr. Evans spoke of the use of digitalis. Digitalis is very good in some cases—in some cases it is necessary to use digitalis to stimulate the heart action and also accelerate the action of the kidneys, but after a thorough catharsis at the beginning of the disease, after a few hours giving 10 to 20 grains of quinin every 6 hours, it would require about six doses to bring about desired effect. After 72 hours of this treatment the case is convalescent. We look for a pulse of 140 with a temperature of 103° in these cases. I can see no bad results in pneumonia where the doctor in charge keeps up the heart action, and quinin treatment which acts as a specific.

Dr. P. K. Brown, San Francisco: Pneumonia is a self-limited disease. The point which Dr. Carson made is that there is great danger in doing too much for these cases. A great many cases of pneumonia are treated to death and get well if let alone. In my service at the County Hospital where we get the alcoholic and the laboring man brought in exhausted after a long ambulance ride and having had no care for two or three days, our orders are to give these people nothing in the way of drugs, and they are sure to get well. Now the point is, can we fill them with quinin and regard it as a specific, and in all probability are they not going to get well anyway? Putting 45 to 50 grains of quinin into a person cannot be condemned too severely. We have no standard by which we know what these cases would do if they were left alone. It seems to me that one lesson that hospital treatment has taught is a thing which Dr. Carson has probably mentioned, and that is the value of out of doors treatment. There is not a hospital to-day which has not reconstructed itself and built its roof into an out-of-doors ward. Even the old Belleview in New York has done this and they keep

their cases out of doors winter and summer. They do better in the open air. If you give a pneumonia case a chance, relieve the distention of his stomach (and giving a preliminary clearing up with calomel and salts will do that), and feed him lightly, your case will get well. Do not give him a two-pound hot poultice to lift up and down with every breath, and if you do give the heart the help it needs, give it when it needs it—caffein two or three grains at a time hypodermically—but do not wait until it has failed and then try to help it,—and the chances are these pneumonias will be lifted over the hill,—that is, if you do all you can before the crisis has arrived. I do not believe in treating pneumonias as they are only too often treated, and I do believe in lifting off the burden and letting them alone as much as you can.

Dr. Carson, closing discussion: Dr. Evans spoke of the use of oxygen. I have used it in a few cases but have never been able to see the good results from the use of oxygen. We overcome all this when fresh air is used. That is the oxygen that is needed. I was very glad to hear Dr. Brown's remarks, because I believe thoroughly that there are a great number of pneumonias that are really injured by drugs. Some doctors have the hobby of giving strychnin right from the start. It looks to me like kicking a dying horse when it is down. The benefit of fresh air in these cases was first noticed in the army, when it was found that those cases of pneumonia treated in tents always did better and got well sooner than those in the hospitals. The mortality was lessened. I have been interested in a recent report from Nevada stating that their pneumonias are somewhat different from ours here. They seem to be very sick and die within 48 hours.

COUNTY SOCIETIES

FRESNO COUNTY.

The following resolution was passed unanimously by Fresno County Medical Society, December 1, 1908:

Whereas, It is a recognized fact, that tuberculosis is one of the most destructive diseases known to the human race, and whereas, our safety and relief from this dread scourge lies more in prevention than cure, and

Whereas, It has recently been brought to the attention of the medical profession that a large percentage of many herds of the cattle in this State are infected with tuberculosis, which is a grave menace to all those using milk from infected dairies.

Now, Therefore, be it resolved that this Society urgently recommends to the legislators elected from this county, that they co-operate with the State Dairy Association at the meeting of the next legislature, and use every honorable means possible, to enact such uniform state laws as shall secure protection for the people, by enforced sanitation and inspection of all cattle, and suitable recompense for diseased and condemned stock.

And be it further resolved that a copy of this resolution be placed in the hands of every representative of this county for their careful consideration.

(Signed) GEO. H. AIKEN.

And also the following:

(Resolutions of respect, Dr. J. D. Davidson. Adopted December 8, 1908, by Fresno County Medical Society.)

It is with profound regret that the Fresno County Medical Society is called upon to record the loss of an active and valued member of our body and of the medical profession, through the untimely death while in the prime of his manhood of Dr. Joseph D. Davidson, which occurred on Monday, November 30, 1908, at his residence in this city.

Dr. Davidson was born in Columbia, Tenn., in 1862, being therefore at the time of his death 46 years of age. He was a graduate of the Vanderbilt Medical College of Nashville, obtaining his degree in 1881, since which time he has been actively engaged in the practice of medicine.

In 1886 Dr. Davidson came to California and took up his residence in Kingsburg, in this county, where he practiced for four years. In 1890, at the age of 28, the doctor removed to Fresno, where he was continuously and actively engaged in his chosen profession until death. During his eighteen years of residence in this city he secured a large practice and was widely and favorably known throughout the valley and State as a surgeon of exceptional ability.

He had been a sufferer from organic disease of the heart for some five or six years and well knew that his days were numbered, but elected to keep in active practice as long as he was able. In October Dr. Davidson's condition grew worse and he was finally compelled to discontinue work and from that time until death relieved him he was confined to his room.

In testimony of the esteem in which Dr. Davidson was held and in acknowledgment of his many and sterling virtues and in honor of his memory, this report is spread upon the minutes of our Society.

(Signed) J. R. WALKER,
A. B. COWAN,
CHESTER ROWELL,
Committee.

LOS ANGELES COUNTY.

The discussion of the subjects announced (The State Journal and the Register and Directory) was as follows in abstract:

Dr. W. W. Beckett, president of the State Society, made some remarks commendatory of the Journal and its editor. He spoke of the County Association as the important unit of the system of organization, and suggested as a means of increasing its membership that the secretary send application blanks to all registered physicians in the county.

Dr. W. H. Dudley suggested that the Journal could be made of greater interest by a more complete report of the doings of the County Societies, both as a whole and as regards its individual members. He suggested that a reporter be appointed for this purpose from each of the County Societies.

Dr. W. T. McArthur suggested, in regard to Dr. Beckett's idea for increasing the membership, that applications be sent only to such physicians as the Council might consider as desirable members.

Dr. F. M. Pottenger suggested that the members of this Society send more of its good papers to the Journal for publication. He further suggested that the attendance at our association meetings would be increased if better programs were provided, and suggested that to this means a program committee be appointed, and that certain members be appointed to search the literature and report at the meetings upon new subjects of interest to the profession.

Dr. S. P. Black suggested, as regards the Journal, that the editorials could be improved by eliminating from them the discussion of matters of slight importance, and taking up subjects of broader scope along educational lines. He stated that in some of the best eastern journals the editorials were frequently written by the ablest writers in the profession, and not by the editor alone. He suggested, for increasing our attendance, that better programs be provided, and commended the appointment of a program committee. He further suggested the employment of a stenographer to report the proceedings of the Society. He spoke of the usefulness and necessity of the Register, and emphasized the importance of its accuracy.

Dr. George L. Cole emphasized Dr. Black's remarks concerning the editorials. He commended the editor of the Journal for his actions regarding clean advertising, but thought that the editorials harped too much upon the matter. He suggested that though much good had been accomplished in regard to proprietary medicines by these editorials, the aims of the Society could be better advanced by improving the scientific standard of its literature, and giving greater latitude to more important subjects.

Dr. A. S. Lobingier said that he did not find the Journal a source of much comfort nor benefit, and that after a cursory glance he usually consigned it to the waste paper basket. He spoke of the proprietary drug matter as having become an obsession of the editor, and that the space of its discussion could be better filled by other more important matters. He emphasized the necessity of good programs, etc., increasing our attendance.

Dr. George H. Kress spoke upon the Journal as a means for the upbuilding of the Society, and suggested that it should be utilized as a medium of intercourse between the County Societies by the introduction of matter of a more personal character. He suggested the need of improvement in its typographic form, and added that a booklet-type would be more convenient for filing. He emphasized that the profession of California did not send its best literary effort to the Journal, and approved of Dr. Black's suggestion that the editor be aided in his editorial writings by other able writers in the Society.

Dr. P. C. H. Pahl spoke commendatory of the Journal, and expressed his appreciation of the work of the editor, especially in the matter of proprietary medicines.

Dr. R. W. Miller commended the editor for his fight against nostrums, and said that the fight was not yet over, and should be continued.

The tellers announced the result of the ballot as follows:

President, Dr. Stanley P. Black; vice-president, Dr. E. W. Fleming; secretary-treasurer, Dr. W. W. Richardson; councilors at large, Dr. George L. Cole, Dr. F. C. E. Mattison, Dr. F. M. Pottenger.

NAPA COUNTY.

Dear Doctor:

It gives me much pleasure to inform you that the Napa County Medical Society held a most interesting meeting last Thursday in the State Hospital. Dr. S. McL. Doherty, the president, presided and a goodly number of members were present, also several visiting doctors. A very interesting clinic was held on Paranoia; several subjects were shown to illustrate the various stages of that derangement.

New officers were elected for the ensuing year as follows:

President, Dr. A. J. Kahn, Napa; vice-president, Dr. Frank C. Newton, St. Helena; secretary-treasurer, Dr. Arthur H. Reinstein of the Veterans' Home. Drs. O. T. Schulze, Arthur H. Reinstein, Chas. H. Bulson, G. G. Hawkins of Lake County, L. A. Geraldson, were elected members. It was decided that inasmuch as no meetings were held during the year 1908 no dues would be expected paid by the members for that year. I was instructed to request you to inform me what the dues to the State Society would be for 1909 and then send you a check. An elaborate banquet was then enjoyed at the residence and at the invitation of Dr. Doherty, after which an adjournment was taken.

ADOLPH J. KAHN, Acting Secretary.

RIVERSIDE COUNTY.

The regular meeting of the Riverside County Medical Society for December was held Monday evening, December 14th at the home of Dr. A. S. Parker. The letters received from the secretary of the Medical Society of the State, relative to appointing a legislative committee and suggestions for the Journal and Register, were read and the committee was appointed as follows: Drs. Sawyer, Baird and Roblee. The matter of Journal will be discussed at a later meeting.

The following members were elected to office for the ensuing year:

President, Dr. Thomas R. Griffith; vice-president, Dr. H. M. Robertson; secretary-treasurer, Dr. Geo. E. Tucker.

The program was a continuation of the regular study course as outlined by the A. M. A.. We are pleased to note that according to the last "Bulletin," the Riverside County Society is the only one in California doing the study work as outlined. The next meeting of the Society is to be held at the Victoria Club House, and is to be a joint physician and druggist meeting. This is held for the purpose of discussing the subject of proprietaries and such other subjects as may be of interest along this line. The Society endorsed the resolution adopted by the Southern California Medical Society, advising the reappointment of Dr. N. K. Foster to the office of Secretary of the State Board of Health and so notified the Governor.

GEO. E. TUCKER, Secretary.

SAN JOAQUIN COUNTY.

At a recent meeting of our society, the president appointed the following to act as the legislative committee: B. F. Walker, F. P. Clark and J. E. Nelson.

At the regular monthly meeting held December 26, the following officers were elected for the ensuing year:

President, Dr. J. P. Hull; first vice-president, Dr. M. Goodman; second vice-president, Dr. L. Welti; secretary-treasurer, Dr. B. F. Walker; delegates to the State Society, Drs. B. J. Powell, A. W. Hoisholt; alternates, Drs. Walker and Langdon; committee on admissions, Drs. Goodman, Welti, H. Smyth, Tully and Craviotto; committee on ethics, Drs. Hull, Hoisholt, Tower, E. A. Arthur, Harry; committee on finance, Drs. Latta, Tully, Sanderson; trustees, Drs. Thompson, Taggart, Ray.

B. F. WALKER, Secretary.

SANTA CLARA COUNTY.

The annual meeting of the Santa Clara County Medical Society was held at the St. James Hotel on December 16th. Dr. Edith E. Johnson, 375 Hawthorne avenue, Palo Alto, was elected to membership. Resignations were received from Drs. Ulrich and R. J. Smith. The annual report of the secretary and treasurer were read and placed on file. Dr. Lincoln Cothran presented a report of the committee on prosecutions. The President, Dr. Jordan, presented his annual report which was referred to a committee for acceptance.

The following officers were elected to serve the society for the coming year:

President, Wm. Simpson of San Jose; first vice-president, Dr. Brown of San Jose; second vice-president, Dr. Snow of Palo Alto; third vice-president, Dr. Thayer of Gilroy; secretary, Dr. J. J. Kocher; treasurer, Dr. H. J. B. Wright; councillors, Drs. Hall, Osborne and W. S. Van Dalsem; delegates, Drs. Snow and Hall; alternates, Drs. Asay and Fowler.

Dr. Asay was elected to honorary membership, having been engaged in the practice of medicine for fifty years. Dr. Hall spoke of the necessity of establishing a hospital for infectious diseases, a friend having placed $3000 at his disposal for such a purpose. A committee consisting of Drs. Hall, Osborne, Wright, Paul and Walter was appointed to formulate a plan to further the project and report.

J. J. KOCHER,
Secretary.

GOOD WORK IN PASADENA.

The mayor and council of Pasadena, California, have recently passed a resolution favoring a more rigid enforcement of the ordinance compelling the reporting of all infectious diseases, including tuberculosis, and have also made a generous provision whereby the fumigation of all rooms and houses vacated by any infectious or tubercular case shall at once be thoroughly disinfected by a city official at the city's expense.

Thus every one coming to Pasadena is assured of protection against entering infected rooms.

The Shakespeare Club, of five hundred ladies, are the most enthusiastic supporters of this movement. The best real estate firms are urgent to have it carried out, and they certainly are in a business position and mental attitude not to rent or sell to their clientelle any premises that is not perfectly sanitary, both as to infection and plumbing.

The Medical Society of Pasadena stand back of the proposition and are giving their health officer their unanimous support.

ADDITIONAL NEW REMEDIES APPROVED.

To the list of articles accepted by the Council, which appeared in the Journal December 5, the following were added:

Soloid Mercuric Potass. Iodide (Burroughs Wellcome & Co.).

Soloid Nizin (Burroughs Wellcome & Co.).

Tabloid Coffee Mint (Burroughs Wellcome & Co.).

Bismuth & Iron Citrate (Burroughs Wellcome & Co.).

Bismuthal (National Pharmacy Co.).

Bismuth & Lithium Citrate (Burroughs Wellcome & Co.).

Colochi-Methyl Capsules (Wampole & Co.).

Syrup Ammonium Hypophosphites (R. W. Gardner).

COUNCIL MEETING.

The presence of Dr. Wesley W. Beckett, President of the State Society, in San Francisco was the reason for calling a meeting of the Council on January 4th. No matters of special importance were taken up except the probable attitude of the present legislature toward the medical law, and what the Society should do to point out to our legislators that the law should be left as it is. The meeting was well attended.

DISTINGUISHED VISITOR.

Dr. Gustave Toepfer, of Vienna and Karlsbad, paid a visit to San Francisco during December, leaving for the East a few days before Christmas. He seemed to thoroughly enjoy what he saw of California and expressed a keen desire to return.

PROPOSED CONSOLIDATION.

At the last meeting of the Regents of the University of California, Dr. W. Jarvis Barlow, Dean of the Medical School of the University of Southern California, appeared, according to press reports, and presented the request from the southern medical school, to be taken into affiliation with the University of California. It is generally understood that the matter has been under consideration by the faculties of the two medical schools for some time past and that the faculty of the Medical Department of the University of California has recommended to the Regents that the affiliation be accepted and perfected. This would seem to be rather a wise move; there are too many medical schools anyhow, and the more they can be concentrated the better.

TUBERCULOSIS SANATORIA.

The present agitation in the matter of public education on the tuberculosis matter may have something to do with it, but certain it is that a number of sanatoria for the care of tuberculotics have been and are being opened in various parts of the State. Dr. Peers, of Colfax, has started a small place and so has Dr. C. A. Shepard, of Needles. Dr. Walker in San Francisco also has done the same thing and others will soon be opened.

TUBERCULOSIS IN THE LEGISLATURE.

Several bills have been introduced in the present legislature dealing with the tuberculosis problem. Senate bill No. 63 calls "for the creation of a tuberculous commission," which we trust is merely a typographical error. It provides for a careful study of the question throughout the State and appropriates $5000 for the expenses of the work. The commission is to consist of seven members to be appointed by the Governor.

TUBERCULOSIS CLINIC IN SAN FRANCISCO.

The San Francisco Tuberculosis Association announces the opening of its out-patient clinic at 1734 Stockton street, near Filbert, on January 18th. It will remain at this location until its own building is ready for use. Trained nurses will be provided to do the home work, inspection, etc., and physicians from the several institutions in the city have been appointed to do the clinic work.

PUBLICATIONS

Transactions of the Tenth Annual Meeting of the American Proctologic Society. Edited by Samuel T. Earle, M. D., and Lewis H. Adler, Jr., M. D.

The Arteries of the Gastro-Intestinal Tract With Inosculation Circle. Byron Robinson.

Gray's Anatomy, the 17th edition, has been issued by Lea & Febiger, Philadelphia. The present edition is of course, in many ways, an improved and more up-to-date work than the preceding editions. Gray's Anatomy needs no extended review; it is too well known to require more than mention.

Progressive Medicine, Vol. III and Vol. IV, December, 1908. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Profesor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 333 pages, with 26 engravings and 2 colored plates. Per annum, in four paper-bound volumes, containing over 1,200 pages, $6.00, net; in cloth, $9.00, net. Lea & Febiger, Publishers, Philadelphia and New York.

Changes of Address.

Stansbury, Milton P., from St. Luke's Hospital, San Francisco, to Chico, Cal.

Gunn, Herbert, from 1059 O'Farrell st., to 240 Stockton st., San Francisco.

Jones, Carl P., from St. Luke's Hospital, San Francisco, to Grass Valley, Cal.

Huckins, J. W., from Vallejo, Cal., to 1922 Pierce st., San Francisco.

Ranson, Dow H., from St. Luke's Hospital, San Francisco, to Madera, Cal.

Myers, J. J., from Madera, Cal., to Raymond, Cal.

Peterson, Fred W., from Imperial, Cal., to El Centro, Imperial County, Cal.

Patten, Elmer E., Imperial, Imperial County, Cal.

Huff, Melvin B., from Los Angeles, Cal., to Corona, Cal.

Burnham, Clark J., from 1121 Devisadero st., San Francisco, to Alta Vista Bldg., Berkeley, Cal.

Meagher, Jos. F., 4096 Eighteenth st., San Francisco.

Grimes, Wm. L., 163 Sixth ave., San Francisco.

Shinnick, Chas. C., from Oakland, Cal., to Santa Cruz, Cal.

Matsuda, M., temporarily in Japan.

Janss, Herbert, of Los Angeles, is traveling abroad.

Hardin, A. E., from Petaluma, Cal., to Grass Valley, Cal.

Higbee, Annie Carveth, from Whittier, Cal., to Norwalk, Cal.

Williams, Clara L., from 1725 Euclid ave., Berkeley, Cal., to El Granada, Bancroft Way, Berkeley, Cal.

Tillman, Frank J., from San Francisco to Ukiah, Cal.

Potter, Samuel O. L., from 30 Liberty st., San Francisco, to 986 Ellis st., San Francisco.

Richter, C. M., from 2108 Scott st., San Francisco, to 146 Grant ave., San Francisco.

Titchworth, James Chas., from Sherwood, Cal., to Willits, Cal.

Williams-Hammond, Edith S., from 121 Geary st., San Francisco, to 41 Fifth ave., San Francisco.

McMillan, E. H., from Redondo, Cal., to Pasadena, Cal.

Hembree, A. T., from Forest Hill, Cal., to Redondo, Cal.

Dannenbaum, Sydney R., from 2717 Sacramento st., to 2723 Sacramento st., San Francisco.

Pond, Chauncey P., from Groveland, Cal., to Alameda, Cal.

Thorne, Walter S., from 350 Post st., to 240 Stockton st. (Schroth Bldg.), San Francisco.

Helms, Geo. L., 111 Ellis st., San Francisco.

Osmun, W. F., from 1552 Haight st., to Van Ness and Golden Gate aves., San Francisco.

Simpson, Josiah A., from 612 Twentieth st., to 638 Twentieth st., San Francisco.

Paroni, Romilda, from Berkeley, Cal., to 810 Union st., San Francisco, Cal.

Grosse, Alfred B., from 2209 Sutter st., to 162 Post st., San Francisco.

Ryfkogel, H. A. L., from 2209 Sutter st., to 162 Post st., San Francisco.

Smith, Ethan H., from 1424 Gough st., to 2617½ Octavia st., San Francisco.

Magnus, Max Edward, from 681 Hayes st., to 643 Hayes st., San Francisco.

Alexander, P. C., from 1059 O'Farrell st., to 240 Stockton st., San Francisco.

Cadwallader, R., from 1425 Haight st., to 240 Stockton st., San Francisco.

Zillmer, A. L. W., from 731 Clayton st., San Francisco, to 3601 Twenty-third st., San Francisco.

Hess, Hiram A., 749 Hayes st., San Francisco.

Shepherd, A. L., Etiwanda, Cal.

Rosenthal, Chas. H., from 636 Baker st., San Francisco, to 2310 Le Conte ave., Berkeley, Cal.

Ash, Rachael L., from 1275 Third ave., to 2576 Washington st., San Francisco.

Barry, Ernest, from 2510 Washington st., to 240 Stockton st., San Francisco.

Sharp, James G., from 3047 Washington st., to 135 Stockton st., San Francisco.

Lennon, Milton B., from 918 Eddy st., to 946 Eddy st., San Francisco.

Williams, Francis, from 1392 Haight st., to 1200 Masonic ave., San Francisco.

Newmark, Leo, from 2230 Sacramento st., to St. Francis Hotel, San Francisco.

Barney, T. R., from 2933 Grove st., Berkeley, Cal., to 2247 Ashby ave., Berkeley, Cal.

Besson, Edward A., from 928 Ellis st., to 978 Ellis st., San Francisco.

Vecki, Victor G., from 1408 Geary st., to 318 Bush st., San Francisco.

Gaynor, John J., from Eureka, Cal., to Angelus Hospital, Los Angeles, Cal.

Craig, Murdock A., from 520 Sacramento st., Vallejo, Cal., to 626 Sonoma st., Vallejo, Cal.

Hembree, A. F., Garland Bldg., Redondo, Cal.

Kirk, Josiah H., from 627 University ave., Palo Alto, Cal., to First National Bank Bldg., Palo Alto, Cal.

Montgomery, D. W., from 2419 California st., to Elkan Gunst Bldg. (323 Geary st.), San Francisco.

Eaton, Geo. Lee, from 898 Fillmore st., to 323 Geary st. (Elkan Gunst Bldg.), San Francisco.

Hoffman, Lawrence H., 135 Stockton st., San Francisco.

Oliver, Harry R., 135 Stockton st., San Francisco.

French, Chas. E., from 1914 Pine st., to 1178 Eddy st., San Francisco.

Henslee, Wm., from 1884 McAllister st., to 1236 Sixth ave. (Sunset District), San Francisco.

Flint, Wm. H., 1226 State st., Santa Barbara, Cal.

Hurst, Julius H., 1227 State st., Santa Barbara, Cal.

Low, Samuel P., 1220 State st., Santa Barbara, Cal.

Barry, Wm. T., Canfield Blk., Santa Barbara, Cal.

Grissim, J. D., from 1111 Washington st., Oakland, to Union Savings Bank Bldg., Oakland.

Lux, Fred W., from 2661 Clay st., to 135 Stockton st., San Francisco, Cal.

Gleason, Chas. D., from German Hospital to 240 Stockton st., San Francisco.

New Members.

Reinstein, Arthur H., Napa, Cal.
Schulze, Otto T., Napa, Cal.
Bulson, Chas. H., Napa, Cal.
Hawkins, G. G., Middletown, Cal.
Bullington, Perry E., Chico, Cal.
Jones, Carl P., Grass Valley, Cal.
Finney, Wm. N., Lincoln, Cal.
Falk, Eugene V., Eureka, Cal.
Scannell, J. W., Windsor, Cal.
Stansbury, Middleton Pemberton, Chico, Cal.
Johnson, Edith E., 375 Hawthorne ave., Palo Alto, Cal.
Harrison, W. H., 692 Third avenue, San Francisco, Cal.
Holsclaw, Florence M., 391 Sutter st. (Galen Bldg.), San Francisco.
Stark, Bertha W., 1065 Sutter st., San Francisco.
Hopkins-Thorne, Grace L., Fresno, Cal.
Fay, Wilbert L., Forest Hill, Cal.
Friedberger, W., Stockton, Cal.
Tebbetts, Hiram B., City Health Office, Los Angeles, Cal.
Wright, Thompson B., Pasadena, Cal.
Wilson, Horace P., Whittier, Cal.
Fielding, Geo. A., Sawtelle, Cal.
Robinson, Frank Neal, Monrovia, Cal.
Warden, Carl C., Los Angeles, Cal.
Hunter, Geo. G., Los Angeles, Cal.
Theime, D. A. J., Los Angeles, Cal.
Walker, Horatio, Los Angeles, Cal.

Deaths.

Titus, Frank H., died in Texas.
Davidson, Jos. D., of Fresno.
Ogden, Wm. Martin, Los Angeles, Cal.
Carlisle, Eber S., Los Angeles, Cal.
Moody, Mary W., San Francisco.
Chadbourne, Edwin R., Pasadena, Cal.
Joyce, Fred'k L., of San Francisco, died in Monrovia, Cal.

Resigned.

Ulrich, Edward John, San Jose, Cal.
Smith, Rensellar J., Milpitas, Santa Clara County, Cal.

Retired.

Rankin, John T., Los Angeles, Cal.

BOARD OF EXAMINERS, DECEMBER SESSION.

Passed.

School of Medicine.	Date of Graduation.	Percentage,
Coll. of P. & S., S. F., Cal	5, 14, 08	83.3
Coll. of P. & S., S. F., Cal	5, 14, 08	82.0
Coll. of P. & S., S. F., Cal	5, 14, 08	77.1
Coll. of P. & S., S. F., Cal	5, 17, 06	75.8
Cooper Med. Coll., S. F., Cal	5, 6, 08	81.1
Cooper Med. Coll., S. F., Cal	5, 20, 08	78.9
Cooper Med. Coll., S. F., Cal	5, 8, 07	75.0
Univ. of Cal., S. F., Cal	5, 14, 08	76.3
Univ. of Cal., S. F., Cal	5, 14, 07	76.0
Univ. of So. Cal., L. A., Cal	6, 18, 08	78.0
Univ. of So. Cal., L. A., Cal	6, 18, 08	75.0
Coll. of Med. of Columbia Univ., N. Y	5, 27, 08	78.4
Coll. of P. & S. of Baltimore, Md	4, –, 94	78.2 plus 5=83.2
Coll. of P. & S. of Chicago, Ill., (Univ. of Ill.)	4, 19, 98	71.3 plus 5=76.3
Coll. of P. & S., N. Y	6, 8, 98	73.4 plus 5=78.4
Denver & Gross Coll. of Med., Colo	5, 14, 08	75.0
Harvard Med. Coll., Mass	6, 24, 08	77.3
Jefferson Med. Coll., Pa	6, 4, 06	84.2
Jefferson Med. Coll., Pa	6, 4, 06	78.6
Jefferson Med. Coll., Pa	5, 29, 02	75.5
Kansas City Med. Coll., Mo	3, –, 98	78.3 plus 5=83.3
Miami Med. Coll., Cin., O	6, 1, 04	77.9
N. W. Med. Sch., Ill	6, 4, 08	78.8
Rush Med. Coll., Ill	8, 27, 08	86.7
Rush Med. Coll., Ill	3, 19, 08	86.3
Rush Med. Coll., Ill	6, 18, 02	82.1
Rush Med. Coll., Ill	5, 27, 96	75.4 plus 5=80.4
Rush Med. Coll., Ill	6, 12, 07	76.1
Univ. of Mich	6, 22, 05	79.5
Univ. of Penn.	6, –, 06	81.1
Univ. of Penn.	6, 7, 94	71.1 plus 5=76.1
Univ. of Sausame, Switzerland	–, –, 99	79.5
Univ. of Texas	5, 1, 94	70.1 plus 5=75.1
Univ. Med. Coll. of Mo.	5, 2, 08	75.7
School of Osteopathy.		
Southern Sch. of Osteo., Ky	–, –, 00	84.5 plus 5=89.5

Failed.

Coll. of P. & S., L. A., Cal	6, 26, 08	73.9
Coll. of P. & S., S. F., Cal	6, 6, 07	69.9
Coll. of P. & S., S. F., Cal	6, 6, 07	68.9
Coll. of P. & S., S. F., Cal	5, 17, 07	68.3
Coll. of P. & S., S. F., Cal	6, 6, 07	67.5
Cooper Med. Coll., S. F., Cal	5, 5, 08	72.5
Univ. of Calif., S. F., Cal.	5, 12, 08	72.8
Univ. of So. Cal., L. A., Cal	6, 19, 05	73.3
Univ. of So. Cal., L. A., Cal	6, 18, 08	72.0
Univ. of So. Cal., L. A., Cal	6, 13, 07	70.4
Univ. of So. Cal., L. A., Cal	6, 18, 08	70.0
Univ. of So. Cal., L. A., Cal	9, 3, 04	53.2
Univ. of So. Cal., L. A., Cal	6, –, 03	45.0
Atlanta Med. Coll., Ga	3, 1, 08	16.9
Baltimore Med. Coll., Md	5, 21, 07	63.6
Coll. of P. & S., St. Louis, Mo	4, 27, 08	65.6
Jefferson Med. Coll., Pa	5, 4, 94	52.3 plus 5=57.3
Louisville Med. Coll., Ky	3, 25, 97	62.1 plus 5=67.1
Med. Coll. of Ind.	3, 29, 98	39.4 plus 5=44.4
Miami Med. Coll., Cin., O	5, 1, 03	62.2
Omaha Med. Coll., Nebr	4, –, 02	69.5
State Univ. of Iowa	3, 9, 92	61.3 plus 5=66.3
State Univ. of Iowa	3, 5, 85	60.1 plus 10=70.1
Univ. of Louisville, Ky	3, 13, 93	63.4 plus 5=68.4
Univ. of Mich	6, 30, 98	57.3 plus 5=62.3
Univ. of the City of N. Y	4, –, 93	67.8 plus 5=72.8
Univ. of Vermont Coll. of Med., Vt	6, 26, 07	66.5
Washington Univ., Mo	5, 23, 07	71.1
School of Osteopathy.		
Northern Inst. of Osteo., Minn	6, 1, 97	59.2 plus 5=64.2
Still Coll. of Osteo., Iowa	1, 31, 07	54.9

"Plus," credit given for years of practice.

Failed to pass in August; papers revised and certificates issued in December.

Coll. of P. & S., L. A., Cal	6, 26, 08	73.9
Hahnemann Med. Coll. of Pac., Cal	5, 21, 08	73.2
Univ. of So. Cal., L. A., Cal	6, 18, 08	75.1
Univ. of So. Cal., L. A., Cal	6, 18, 08	73.6
Univ. of So. Cal., L. A., Cal	6, 18, 08	73.6
Univ. of So. Cal., L. A., Cal	6, 18, 08	73.3
Jefferson Med. Coll., Pa	6, 8, 08	74.1
Miami Med. Coll., Cinn., O	6, –, 05	73.7
Univ. of Copenhagen, Den.	2, 21, 06	73.5
Royal Univ. of Ireland	–, –, 88	80.0

NEW LICENTIATES.

Adler, Howard F.; Boatman, H. F.; Bowling, R. W.; Brown, F. Earl; Bullock, N. H.; Campiche, Paul; Doak, T. C.; Frank, M. A. S.; Gould, N. B.; Guntz, Adolph V.; Hall, Edwin Hines; Hare, Chas. B.; Huggins, W. L.; Hutchison, C. S.; Kaull, L. P.; LaMotte, L. A. J.; Marston, Chas. B.; McCoy, Geo. W.; McKenney, A. C.; Molony, Martin; Mudd, J. L.; Nielsen, Soren; Painton, H. R.; Pascoe, Elmer R.; Proctor, M. C.; Reed, J. Ross; Reynolds, Royal; Richter, H. C.; Rosenberger, H. G.; Ross, K. F.; Sampson, J. H.; Scheier, R. B.; Schoff, C. E.; Seager, H. W.; Sheaff, P. A.; Shortlidge, E. D.; Smith, F. J.; Smith, Walter A.; Soll, C. H.; Sylvester, F. M.; Topham, B. E.; VanPatten, P. S.; Ward, J. M.; Weber, W. L.; Wood, E. H.

NEW AND NON-OFFICIAL REMEDIES.

(Continued)

TRIPHENIN.

Triphenin, $C_6H_4(OC_2H_5)NH(CH_3CH_2CO) = C_{11}H_{15}NO_2$, is a derivative of paraphenetidin, differing from acetphenetidin (phenacetin), $C_6H_4(OC_2H_5)NH(CH_3CO)$, in that the acetic acid residue, (CH_3CO), has been replaced by the propanoic residue, (CH_3CH_2CO).

Actions and Uses.—Triphenin is antipyretic, analgesic and hypnotic; its action is slower and milder than that of phenecetin, because it is less soluble, and it is said to be free from by- or after-effects. Dosage.—As an antipyretic, 0.25 to 0.6 Gm. (4 to 10 grains); as an antineuralgic, 1 to 1.3 Gm. (15 to 20 grains), preferably in wafers. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

TROPACOCAINE HYDROCHLORIDE.

Tropacocaine hydrochloride, $C_6H_{14}NO(C_7H_5O).HCl = C_{15}H_{19}NO_2.HCl$, is the hydrochloride of synthetic tropacocaine.

Actions and Uses.—Tropacocaine hydrochloride is a local anesthetic, resembling cocaine very closely in its general action, but only half as poisonous. It is reported that anesthesia sets in more rapidly and lasts longer than with cocaine. It produces less dilatation of the pupil, sometimes none at all. It is recommended as a local anesthetic. Dosage.—It is applied in 3 to 10 per cent aqueous solutions containing 0.6 per cent sodium chloride. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

TUMENOL.

Tumenol is a crude mixture of tumenol sulphone and tumenol sulphonic acid derived from bituminous shale.

Actions and Uses.—It is said to be a non-toxic and non-irritant protective and palliative to the skin. Dosage.—As 5 to 20 per cent ointment or 10 per cent solution in water or glycerin and in the form of soap plaster (with salicylic acid). Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

TUMENOL SULPHONE

Tumenol sulphone is a mixture of the sulphonated constituents of tumenol venale which are non-combinable with alkali.

Actions and Uses.—These are described under Tumenol, which see. Dosage.—It is used undiluted for pencillings on squamous and vesiculose eczemas. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

TUMENOL SULPHONIC ACID.

Tumenol sulphonic acid consists of the sulphonated constituents of tumenol venale, capable of combining with caustic alkalies.

Actions and Uses.—See Tumenol. Dosage.—It is used in substance, finely powdered, as a 5 to 10 per cent paste with or without zinc oxide, and in 2 to 5 per cent aqueous solutions as fomentations. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

TUSSOL.

Tussol, $C_{11}H_{12}N_2O.C_6H_5.CHOH.COOH = C_{19}H_{20}O_4N_2$, is a salt of mandelic acid, $C_6H_5(CHOH.COOH)$, and antipyrine.

Actions and Uses.—Tussol combines the antipyretic, analgesic and sedative action of antipyrine with the stimulant action of mandelic acid on glandular secretions. It is recommended for use in the treatment of whooping cough. Some observers question whether it is more effective than a mixture of its components. Dosage.—0.05, 0.1, 0.25, 0.4 or 0.5 Gm. (½, 2, 4, 6 or 8 grains), according to the age of the patient. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

URETHANE.

A name commonly applied to Aethylis Carbamas, U. S. P. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

URIFORM.

Each 8 Cc. (2 fluidrams) is said to contain: Hexamethylenetetramine 0.5 Gm. (7½ grains), Saw Palmetto 0.3 Gm. (5 grains), Santal 0.16 Gm. (2½ grains) Damiana 0.16 Gm. (2½ grains), Coca, 0.16 Gm. (2½ grains), and Nux Vomica 0.016 Gm. (¼ grain) in a menstruum containing 20 per cent. of alcohol with sugar and aromatics. Dosage.—For adults, 4 to 8 Cc. (1 to 2 fluidrams). Prepared by Schiffelin & Co., New York. U. S. trademark No. 37,924.

URITONE.

A name applied to Hexamethylenamina, U. S. P. Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

UROPHERIN-B.

Uropherin-B., $LiC_7H_7N_4O_2 + LiC_7H_5O_2$, is a double salt of theobromine-lithium and lithium benzoate.

Actions and Uses.—It is a diuretic, said to be particularly efficient in connection with digitalis. Dosage.—0.3 to 1 Gm. (5 to 15 grains) in powder or capsules, followed by water. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).